NATIONAL INSTITUTE OF SIDDHA

TAMBARAM SANATORIUM, CHENNAI - 47

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

CHENNAI - 32

Pre-clinical and clinical study on Pavattaiver kudineer Chooranam for Hepatoprotective Activity in the management of Kalleeral noi(Alcoholic liver disease)

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Pre-clinical and clinical study on Gandhaga Maathirai for H1 Histamine Antagonistic Activity in the management of Kaanakadi (Urticaria)

(DISSERTATION SUBJECT)

For the partial fulfillment of the

requirement to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH II - GUNAPADAM

APRIL – 2013

TRIAL DRUG I: PAVATTAIVER KUDINEER CHOORANAM

TRIAL DRUG II: GANDHAGA MAATHIRAI

INTRODUCTION

Alcoholic Liver Disease[1]

Chronic and excessive alcohol ingestion is one of the major cause of liver disease the pathology of alcoholic liver injury. Comprises of three major lesions, rarely existing in a pureform 1. Fatty liver 2. Alcoholic hepatitis and 3. Cirrhosis.

Prevalence[2]

Alcoholic liver disease is foremost health risk in developing countries, and it ranks third in developed countries, Daily ethanol consuption exceeding 40-80g% day for males, and 20-40g% day for females for 10-12yrs will almost certainly lead to alcoholic liver diaease. alcoholism is not only a major health problem, but also social problem in low economic status in india.

Epidimiological study in 2000 reported that 3% of all deaths one due to alcoholic Liver disease, in which 17% are men, 7% are women.[3] In 2005 an assessment by WHO 3.2% of all deaths, and 4% of the impact of the diaease, were due to alcohol.[4]

The prevalence of alcoholism in higer in young men, adults, unmarried, and unemployed[5]. Amoung the alcoholic people the rate of mortality, is highest for alcoholic hepatitis is about 50% .In long term of alcoholism, 20% of alcoholics develop fatty liver, and 10-15% of people develop Cirrhosis[6].

As per siddha text the kalleeral noi is caused by increased level of pitha kutram[7]. Pavattaiver kudineer chooranam(pavetta indica.L) is herbal drug mentioned in gunapadam Mooligai vaguppu 1 part.[8] Pavattaiver kudineer chooranam has not been evaluated for hepatoprotective activity so for.

based on the literature evidence hence the researcher has selected the drug for Hepatoprotective activity and therapeutic efficacy for kalleeral noi.

AIM:

To evaluate the safety and efficacy of Pavattaiver kudineer chooranam, for Hepataprotective activity on Kalleeral noi. (Alcoholic Liver Disease)

OBJECTIVE:

Primary objective:

To evaluate the Hepatoprotective activity of Pavattaiver Kudineer Chooranam.

Secondary objective:

To evaluate the efficacy of Pavattaiver Kudineer Chooranam, in the management of Kalleeral noi (Alcoholic Liver Diseases).

1. Collection of evidences in siddha literature

2. Collection of evidences in botanical aspects.

3 . Standard operative procedure

4. Biochemical analysis

5. High performance thin layer chromatography

6. Physical properties

7. Pharmacological study

8. Clinical study: A pilot study on trail medicine

PVATTAIVER KUDINEER CHOORANAM

MATERIALS AND METHODS

STANDARD OPERATIVE PROCEDURE

Collection of the raw drug:

The raw drug was collected from Ramasamy chetty shop paris Chennai, and. authenticated by competent in department of gunapadam.

Purification process:

Purification of Pavattai Root (Pavetta indica) Linn

Pavattai Root was washed in water [9]

Preparation of the test drug:

The purified root was dried in the shadow. The dried root was pulverised by an Electric grinder in to coarse powder. The powder was stored in a clean, dry air tight container.

LABELLING:

Name of the preparation : Pavattaiver kudineer Chooranam.

Taste : Kaippu (bitter)

Colour : Mild brown colour

Dose : 50gm b.d.(50ml)

Duration : 30 days

Indication : Kalleeral noi

Date of manufacture : The drug was prepared in three batches. 10.3.12, 15.4.12

20.6.12

Expiry : 3 months from the date of manufacture.

Pavetta indica(Lin)

Root of Pavetta indica(Lin)

Pavattaiver kudineer chooranam

REVIEW OF THE LITERATURE

GUNAPADAM ASPECT

பாவட்டை Pavattai[8]

Pavetta indica.Linn

வேறு பெயர் :- பற்பணம்

Tel- Paputta – Vargras Nooni - Papoota

Sans- Pappana

Mal- Malliamothu

Hind- Kankra

Kan. Pavate

இது எங்கும் கிடைக்கும், குத்துச் செடிவகுப்பை சேர்ந்தது.

ப.உ : இலை, காய், வேர்.

சுவை : கைப்பு, கார்ப்பு, தன்மை... வெப்பம், பிரிவு - கார்ப்பு

செய்கை

மலமிளக்கி	மலகாரி Laxative
உரமாக்கி	பலகாரி Tonic

இலை குணம் : இதனால், வளி, ஐயக்கூட்டால் பிறந்த நோய்கள், தாகசுரம், முப்பிணி இவை நீங்கும். பசி உண்டாகும்.

சீதவா தங்களறுந் தீபனமோ உண்டாகும்.
வாதங் கபமொழியும் வார்குழலே - போதவே
ஆவட்டைத் தாகசுரம் அற்றுவிடுந் தோடம்போம்
பாவட்டைப் பத்திரிக்குப் பார். (அ.கு.)

காய்: இதனால், வளி சுரம், அருசி, சீதக்கடுப்பு, ஐயக்குற்றம், கழிச்சல் இவை நீங்கும்.

வாத சுரம்தணியும் வாயருசி எகிவிடுஞ்

சீதக்கடுப்பகலுந் தேமொழியே! - வாதுபுரி

பித்தவதி சாரமொடு பேராக் கபமுமறும்

உற்றபா வட்டங்காய்க்கும்.

இலையைக் குடிநீரிட்டுக் கொடுக்க, மேற்கூறிய நோய்கள் போகும். இலையை வதக்கி வைத்துக் கட்ட, கீழ்வாயிலுண்டாகும் எரிச்சல் தணியும்.

வேரை குடிநீரிட்டு 40-80 மி.லி. தினமிரு வேளை கொடுக்க, ஈரல் நோய்கள், வாதசுரம், சுவை அறியாமை போம். இத்துடன் சிறிது சுக்குச் சேர்த்துச் சோகை நோய்க்குக் கொடுக்க, நீரை இறக்கும்.

பாவட்டை வேர்க் குடிநீர்:

கூறுகின்ற பாவட்டடை கொண்டதே ரண்டமுடன்

வீறுடன்வே லிப்பருத்தி வேரிவையுங் - காறுகின்ற

நன்மிளகுங் கூட்டி நயமாக் கியாழமிட்டுண்

சென்மயிலை யாமசுரஞ் செப்பு:

பாவட்டை வேர், சிற்றாமணக்குவேர், உத்தாமணிவேர், மிளகு முதலியவற்றை ஓரெடையாகக் கூட்டி, இடித்துக் குடிநீர் செய்து குடித்துவர, செரியா சுரம் என்றும் வாராதொழியும். (தே. குடிநீர் 100)

வேர்ப் பொடியை ஒரு 4 கிராம் எடுத்து, சிறிது சுக்குச் சேர்த்துச் சர்க்கரை கலந்து சிறு குழந்தைகளுக்குப் புகட்ட, வலப்பாட்டீரல், இடப்பாட்டீரல், வீக்கம் நீங்கும்.

வேர்ப்பொடி, சுக்குத்தூள் இவ்விரண்டையும் ஓரெடை சேர்த்து, கழுநீரில் கலக்கிப் பெருவயிற்றுக்குக் கொடுக்க, நீரை வற்றச் செய்யும்.

பாவட்டை சேரும் பிற மருந்துகள்:

- வாதசுர கியாழம்:[10]

  அளவு; 1அவுன்ச் வீதம், தினம் 3வேளை

  தீரும் நோய்கள்; வாதசுரம்

- பாவட்டையாதி கசூஷாயம்:[11]

  அளவு; 8 ல் ஒரு பங்கு வடிகட்டி உட்கொள்ளவும்

  தீரும் நோய்கள்; ஜீரம்

- பாவட்டைக் குடிநீர்:[12]

  அளவு: விதிபடிகுடிநீர் செய்து குடுத்து வர

  தீரும் நோய்கள்; ஆமசுரம் தீரும்

- பவட்டை அரைப்பு:[12]

  அளவு: கொட்டைப்பாக்களவு இரு வேளை

  தீரும் நோய்கள்; போர் மாந்தம்

BOTANICAL ASPECT[13]

Classification:

KINGDOM :Plantae

CLADE ;Angiossperms

CLASS ;Dicotyledons

SUB CLASS :Gameopetalae

SERIES ;Inferae

ORDER :Rubiales

FAMILY :Rubiaceae

SUBFAMILY ;Ixoroideae

TRIBE :Pavetteae

GENUS :Pavetta

BOTANICAL NAME :Pavetta indica Linn

VERNACULAR NAMES:[14]

Benali :Jui

Hindi : Kankara

Kannada :Pavati

Malalayam :Pavatta

Sanskrit :Papata

Marathi :Papadi

Oriya :Kotapengu ,kukuchalia

Telugu :Paputta vayru

Tamil :Pavattai

HABITAT:[15]

World –tropical asia, india – common in forests, Is a common shrub found Throughout india, Small stree up to 3mm tall.

PARTS USED:

Root, leaves

LEAVES:

Chartaceous, oblong, obvatvate or lanceolate.

FLOWER:

White in terminal or axillary, trichotomously branched, corymbose cymes

FRUIT:

Berry, black when ripe

ACTION AND USES :[15]

The roots are said to posses, purgative, aperients, diuretic, tonic properties and are prescribed in jaundice, headache, urinary diseases, and dropsical affections a decotion of the root (1in10) is also Given in doses of ½ to 1 ounce, and with ginger added in dropsy a decotion of the leaves is used as a lotion for ulcerated nose and for Haemorrhoids.

CHEMICAL CONSTITUENTS :

It contain a green resin, Starch, an organic acid, Bitter glucoside.

Materials and Methods

Ash Values;

The Ash values are a measure of the inorganic constituents present in the raw drug.A high ash content explains its unsuitable nature to be used as a drug

Total Ash;

A little of extract was taken in a silica crucible previously ignited, cooled and weighed. It was incinerated by gradually increasing the heat not exceeding dull red heat (450°C) until free from carbon, cooled and weighed. The percentage of ash was calculated with reference to air- dried drug. The procedure was repeated to get the constant weight.

Water soluble ash;

The total ash was boiled with 25 ml water and filtered through ash less filter paper (Whatmann 4.1). It was followed by washing with hot water .The filter paper was dried and ignited in the silica crucible, cooled and the water insoluble ash was weighed. The water-soluble ash can be calculated by subtracting the water insoluble ash from the total ash.

Acid insoluble ash;

The total ash obtained was boiled for 5 minutes with 25 ml of (10% w/v) dilute hydrochloric acid and filtering through ash less filter paper (Whatmann 4.1). The filter paper was ignited in the silica crucible, cooled and insoluble ash was weighed.

HPTLC Fingerprint - RH1

HTPLC of Pavattaiver kudineer Chooranam was done in Ramachandra University, Chennai

Sample Preparation

100 mg of extract was weighed and dissolved in 70% methanol to get a concentration of 10mg/ml concentration this is then used for injection.

Chromatographic Conditions

Stationary Phase : Silica gel 60 F 254

Mobile Phase : chloroform: methanol (9:1)

Scanning Wavelength : 404 nm

Applied volume : 10µl

Development mode : Ascending mode

Significance of HPTLC fingerprinting in Standardisation

Standardisation of traditional medicine has become mandatory in the present national and international scientific scenario, as they have to stand competing with stringent regulatory methods and also clinically. HPTLC is one of the versatile chromatographic methods presently available for the rapid analysis of herbal drugs due to several reasons. Firstly the time required for the demonstration of the most of the characteristic constituents of a drug is very quick and short. Secondly, in addition to qualitative detection, HPTLC also provides semi-quantitative information on the major active constituents of a drug, thus enabling an assessment of drug quality. Thirdly the fingerprint obtained is suitable for monitoring the identity and purity of drugs and for detecting adulteration and substitution. Hence in order to check the identity, purity and standardise the quantity of active principles in the herbal extracts a HPTLC fingerprint of all the 12 ingredient medicinal plants used in the formulation has been obtained.

The distribution of phyto-constituents in a plant depends on various factors such as soil, time of collection period of storage, etc. So, it is necessary to standardize the extract being used for pharmacological studies. HPTLC serves as a convenient tool for finding

out the distribution pattern of phyto constituents which is unique to each plant. The HPTLC finger-printing profile establishes the identity and purity of the raw drug being used. It helps in the authentification of the plant material.

Chromatographic Conditions

The finger printing has been done using the following chromatographic conditions. Chromatography was performed on a10x10 cm pre activated HPTLC silica gel 60F 254 plate. Samples were applied to the plate as 6mm wide band with an automatic TLC applicator Linomat 5 with N2 flow (CAMAG, Switzerland), 8mm from the bottom. Densitometric scanning was performed on CAMAG scanner III. The plates were pre-washed by methanol and activated at 60^0 C for 5 minutes prior to chromatography. The slit dimension was kept at 5 minutes x 0.45 minutes and 20 minutes scanning speed was employed. The mobile phase was chosen after running each plant in different mobile phases of varying polarity (Toluene, Toluene: Ethyl acetate and Ethyl acetate: Methanol) and 10 ml of mobile phase was used per chromatography. Linear ascending development was carried out in 20 cm x 10-em twin glass chamber saturated with the mobile phase.

Chromatographic Analysis

The hydro alcoholic extracts of the plants have been prepared at a concentration of 10 mg/10 ml in alcohol and were spotted using CAMAG Linomat 5 applicator. The method was optimized by selecting appropriate mobile phase for respective plant extracts and developed in a twin trough chamber, 20 x 10 cm at 25°C. The plates were dried by hair dryer. The developed plates were scanned at appropriate wavelength using CAMAG TLC scanner 3 and photo-documented using CAMAG REPROSTAR 3.

Inferences

The finger-printing profile establishes the identity and purity of the raw drug being used. It helps in the authentication of the respective plant material. The fingerprinting pattern is characteristic of each plant material used for pharmacological studies. The pattern clearly displays the variation from plant to plant.

HPTLC Fingerprint - RH1

Sample Preparation

100 mg of extract was weighed and dissolved in 70% methanol to get a concentration of 10mg/ml concentration this is then used for injection.

Chromatographic Conditions

Stationary Phase : Silica gel 60 F 254

Mobile Phase : chloroform: methanol (9:1)

Scanning Wavelength : 404 nm

Applied volume : 10µl

Development mode : Ascending mode

Inference

HPTLC fingerprint of RH -1 shows four peaks at Rf values 0.25, 0.31, 0.41 & 0.95. The peak correspond to the Rf value 0.31 has maximum peak area of 7256.5. At this stage it is difficult to confirm the individual components present in the extract, but from our lab experience on phytochemical analysis, we suggest that the major peaks found in the fingerprint may be acidic glycosides / resins. Since, in the present chromatographic conditions, the above mentioned components will be eluted easy.

CHROMATOGRAPHIC CONDITION FOR HPTLC FINGER PRINT

SampleName	:	Pavattatver kudineer chooranam
Sample-ID	:	107
Stationary phase	:	Silica gel F 254
Mobile phase	:	n-Hexane: Ethyl acetate: Formic acid (0:40:2.5 ml)
Scanning wavelength	:	254,298,489 nm
Sample concentration	:	20 mg/ml
Injecting volume	:	5, 10 µl
Development mode	:	ascending mode

BIO -CHEMICAL ANALYSIS OF PAVATTAIVER KUDINEER CHOORANAM

The Biochemical analysis of the Pavattaiver kudineer Chooranam was carried out in the Biochemistry lab, NIS.

S.No	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of sample	Light brown in colour	
2.	**Solubility:** a.A little(500mg) of the sample was shaken well with distilled water. b.A little(500mg) of the sample was shaken well with con. HCl/Con. H_2So_4	Sparingly soluble	Absence of Silicate
3.	**Action of Heat:** A small amount (500mg) of the sample was taken in a dry test tube and heated gartly at first and then strong.	No white fumes evolved	Absence of Carbonate
4.	**Flame Test:** A small amount (500mg) of the sample was made into a paste with con. HCl in a watch glass and introduced into non-luminous part of the Bunsen flame.	No Bluish green flame appeared.	Absence of Copper

5.	**Ash Test:** A filter paper was soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited.	Yellow colour flame appeared.	Presence of sodium

Preparation of Extract:

5gm of Pavattaiver kudineer Choornam (Pavetta indica)linn was weighed accurately and Placed in a 250ml clean beaker and added with 50ml of distilled water. Then it was boiled well for about 10 minutes. Then it was cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S.No	EXPERIMENT	OBSERVATION	INFERENCE
	I.Test For Acid Radicals		
1.	**Test For Sulphate:** a. 2ml of the above prepared extract was taken in a test tube to this added 2ml of 4% dil ammonium oxalate solution b. 2ml of the above prepared extracts was added with 2ml of dil-HCl was added until the effervescence ceases off. Then 2ml of dil.Barium chloride solution was added.	No cloudy appearance present	Abesence of Sulphate
2.	**Test For Chloride:** 2ml of the above prepared extract was added with dil. HCl till the effervescence ceases. Then 2ml of dil.silver nitrate solution was added.	No cloudy appearance.	Absence of Chloride

3.	**Test For Phosphate:** 2ml of the extract was treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3.	Yellow appearance present	Presence of Phosphate
4.	**Test For Carbonate:** 2ml of the extract was treated with 2ml dil. Magnesium sulphate solution	No Cloudy appearance.	Absence of carbonate
5.	**Test For Nitrate:** 1gm of the substance was heated with copper turning and concentrated H2So4 and viewed the test tube vertically down.	No Brown gas evolved.	Absence of Nitrate
6.	**Test For Sulphide:** 1gm of the substance was treated with 2ml of con. HCL	No Rotten Egg Smelling gas.	Absence of Sulphide
7.	**Test For Fluoride & Oxalate:** 2ml of extract was added with 2ml of dil. Acetic acid and 2ml dil.calcium chloride solution and heated.	No Cloudy appearance	Absence of fluoride and oxalate
8.	**Test For Nitrite:** 3drops of the extract was placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil.Benzidine solution was placed.	No Characteristic changes	Absence of Nitrite
9.	**Test For Borate:** 2 Pinches(50mg) of the substance was made into paste by using dil.sulphuric acid and alcohol (95%) and introduced into the blue flame.	No Bluish green colour flame.	Absence of borate

	II. Test For Basic Radicals		
1.	**Test For Lead:** 2ml of the extract was added with 2ml of dil.potassium iodine solution.	No yellow Precipitate obtained.	Absence of Lead
2.	**Test For Copper:** a. One pinch(50mg) of substance was made into paste with con. HClin a watch glass and introduced into the non-luminuous part of the flame.	No Blue colour flame No Blue colour precipitate formed.	Absence of copper
3.	**Test For Aluminium:** To the 2ml of extract, dil.sodium hydroxide was added in 5 drops to excess.	Yellow colour appeared.	Presence of aluminium
4.	**Test For Iron:** a. To the 2ml of extract, 2ml of dil.ammonium solution was added. b. To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNo3 was added	blood red colour appeared.	presence of Iron
5.	**Test For Zinc:** To 2ml of the extract, dil.sodium hydroxide solution was added in 5 drops to excess and dil.ammonium chloride was added.	No White precipitate was formed	Absence of Zinc
6.	**Test For Calcium:** 2ml of the extract was added with 2ml of 4% dil.ammonium oxalate solution	No Cloudy appearance and white precipitate	Absence

		was obtained	of calcium
7.	**Test For Magnesium:** To 2ml of extract dil.sodium hydroxide solution was added in drops to excess.	No White precipitate was obtained	Absence of Magnesium
8.	**Test For Ammonium:** To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.	Brown colour appeared	Presence of ammonium
9.	**Test For Potassium:** A pinch(25mg) of substance was treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.	NoYellowish precipitate was obtained.	Absence of Potassium
10.	**Test For Sodium**: 2 pinches(50mg) of the substance was made into paste by using HCl and introduced into the blue flame of Bunsen burner.	yellow colour flame appeared	Presence of sodium
11.	**Test For Mercury**: 2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.	No yellow precipitate was obtained	Absence of mercury
12.	**Test For Arsenic:** 2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.	No brownwish red precipitate was obtained	Absence of arsenic

	III. Miscellaneous		
1.	**Test For Starch:** 2ml of extract was treated with weak dil.iodine solution	blue colour developed	presence of starch
2.	**Test For Reducing Sugar:** 5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour developed	presence of reducing sugar
3.	**Test For The Alkaloids:** a) 2ml of the extract was treated with 2ml of dil.potassium iodide solution. b) 2ml of the extract was treated with 2ml of dil.picric acid. c) 2ml of the extract was treated with 2ml of dil.phosphotungstic acid.	Yellow colour developed	Presence of Alkaloid
4.	**Test For Tannic Acid:** 2ml of extract was treated with 2ml of dil.ferric chloride solution	black precipitate was obtained	Absence of Tannic acid
5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of dil.Potassium permanganate solution was added.	Potassium permanganate was not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid:** 2 drops of the extract was placed on a		

	filter paper and dried well. 20ml of Biurette reagent was added.	colour developed	Absence of amino acids
7.	**Test For Type Of Compound:** 2ml of the extract was treated with 2 ml of dil.ferric chloride solution.	No green colour developed No red colour developed No violet colour developed No blue colour developed	Absence of oxy quinole pinephrine and pyro catechol Anti pyrine, Aliphatic amino acids and meconic acid are absent Apomorphine salicylate and Resorcinol are absent Morphine, Phenol cresol and hydro uinone are absent

ACUTE AND SUB ACUTE TOXICITY STUDY ON PAVATTAI VER KUDINEER CHOORANAM

Animals

Mice of either sex weighing 25-30g and rats weighing 210-240g were obtained from the animal house of Vels University. The animals were used with the approval of the Institute animal ethics committee and obtained from Vels University, Chennai. They were fed with a balanced standard pellet diet and maintained under standard laboratory conditions, providing 24-28^{0}C temperature, standard light cycle (12 h light, 12 h dark) and water ad libitum. Animals were kept in cages with raised floors of wide mesh to prevent coprophagy. Animal welfare guidelines were observed during the maintenance period and experimentation. The rats were randomly assigned to control and different treatment groups, six animals per group. The animals were acclimatized for one week under laboratory conditions.

ACUTE TOXICITY STUDY-OECD 425 GUIDELINES

Acute oral toxicity test for the Pavattaiver Kudineer Chooranam was carried out as per OECD Guidelines 425. As with other sequential test designs, care was taken to ensure that animals are available in the appropriate size and age range for the entire study. The test substance was administered in a single dose by gavage using a stomach tube or a suitable intubation cannula. The fasted body weight of each animal is determined and the dose is calculated according to the body weight.

After the substance has been administered, food was withheld for a further 2 hours in mice. The animals were observed continuously for the first 4 h and then each hour for the next 24 h and at 6 hourly intervals for the following 48 h after administering of the test drug, to observe any death or changes in general behaviour and other physiological activities. Single animals are dosed in sequence usually at 48 h intervals. However, the time interval between dosing is determined by the onset, duration, and severity of toxic signs. Treatment of an animal at the next dose was delayed until one is confident of survival of the previously dosed animal.

Observation of toxicity signs: General behavior, respiratory pattern, cardiovascular signs, motor activities, reflexes, change in skin and fur, mortality and the body weight changes were monitored daily. The time of onset, intensity, and duration of these signs, if any, was recorded.

SUB-ACUTE TOXICITY

In a 28-days sub acute toxicity study, twenty four either sex (3+3) rats were divided into four groups of 6 rats each. Group I that served as normal control was administered with distilled water (p.o.) while groups II, III and IV were administered daily with the Pavattaiver Kudineer Chooranam (p.o.) for 28 days at a dose of 1.0, 2.0 and 4.0 g/kg respectively. The animals were then observed daily for gross behavioural changes and any other signs of subacute toxicity.

The weight of each rat was recorded on day 0 and weekly throughout the course of the study, food and water consumption per rat was calculated. At the end of the 28 days they were fasted overnight, each animal was anaesthetized with diethylether, following which they were then dissected and blood samples were obtained by cardiac puncture into heparinised tubes. The blood sample collected from each rat was centrifuged with 3000 X g at $4^{o}C$ for 10 min to separate the serum and used for the biochemical assays.

Hematological and blood biochemical analyses:

At the end of the study, all animals were kept fasted for 16-18 h and then anesthetized with anesthetic ether on the 28th day. Blood samples for hematological and blood chemical analyses were taken from retro orbital vein. Heparinized blood samples were taken for determining complete blood count (white blood cell count, differential white blood cell count, platelet count, red blood cell count, hematocrit, and hemoglobin) by semiautomated hematology analyzer. The serum from non-heparinized blood was carefully collected for blood chemistry and enzyme analysis glucose, creatinine, total protein, albumin, total and direct bilirubins, serum glutamate-oxaloacetate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT), and alkaline phosphatase (ALP)) were automatically determined using autoanalyzer.

Necropsy:

All rats were sacrificed after the blood collection. The positions, shapes, sizes and colors of internal organs were evaluated. The Spleen, Testes, Pancrea, Lung, Liver, Brain, Heart, Stomach, Intestine, Bone, Ovary, and Kidney tissues were excised from all rats to visually detect gross lesions, and weighed to determine relative organs' weights and preserved in 10% neutral formalin for histopathological assessment. The tissues were

embedded in paraffin, and then sectioned, stained with haematoxylin and eosin and were examined microscopically.

Statistical analysis

Values were represented as mean ± SEM. Data were analysed using one-way analysis of variance (ANOVA) and group means were compared using the Tukey-Kramer Multiple Comparison Test using GraphPad Instat-V3 software. P values < 0.05 were considered significant.

RESULTS

Clinical signs: Animals were not shown any significant toxic clinical signs during the dosing period of 28 days.

Mortality: All animals from control and all the treated dose groups survived throughout the dosing period of 28 days.

Body weight: Results of body weight determination of animals of control and different dose groups exhibited comparable body weight gain throughout the dosing period of 28 days.

Food consumption: During dosing period, the quantity of food consumed by animals from different dose groups was found to be comparable and normal with that of control animals.

Ophthalmoscopy: Ophthalmoscopic examination of animals in control and test product–treated groups did not reveal any major and remarkable abnormality.

Functional Observations: These tests conducted on the experimental animals at termination and recorded did not reveal any abnormalities.

Urine analysis: Urine analysis data of control group and treated group of animals determined in week 4 did not reveal any abnormalities.

Organ Weight: Comparison of organ weights of treated animals with respective control animals on day 28 was found to be comparable.

Necropsy: Gross pathological examination of animals in control as well as the treated groups did not reveal any abnormalities.

Haematological investigations: The results of haematological investigations conducted on day 28, revealed following significant changes in the values of different parameters investigated when compared with those of respective controls; However, the increase or decrease in the values obtained was within normal biological and laboratory limits.

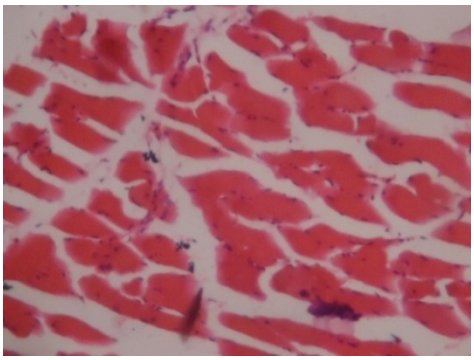
Biochemical Investigations: Results of Biochemical investigations conducted on days 29 revealed significant changes in the values of uric acid and potassium studied when compared with those of respective controls; however, the values obtained were within normal biological and laboratory limits.

CONCLUSION:

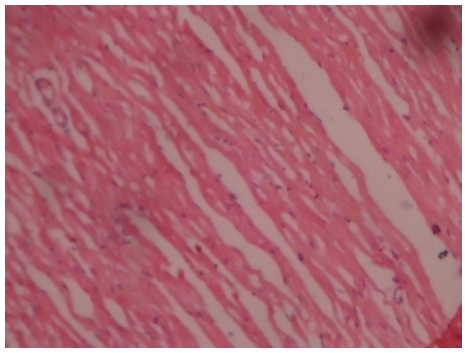
Based on these findings, no toxic effect was observed upto 500mg/kg of Pavattai ver kudineer chooranam treated via oral route over a period of 28 days. So, it can be concluded that the Pavattaiver kudineer chooranam can be prescribed for therapeutic use in human with the dosage recommendations of upto 500mg/kg. body weight p.o.

HISTOPATHOLOGICAL SLIDES

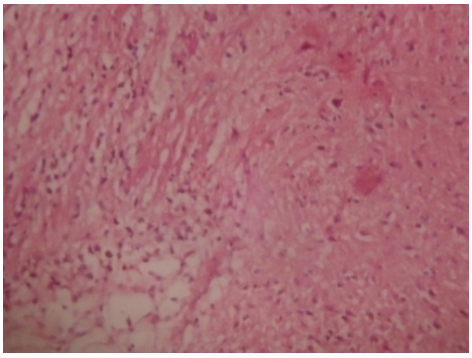
BONE



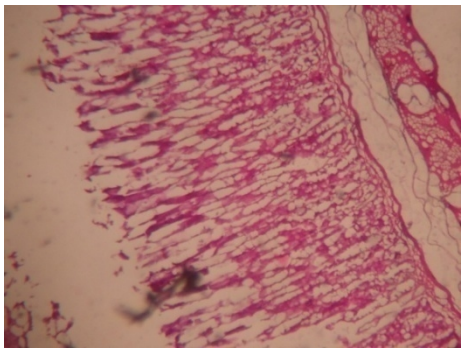
HEART



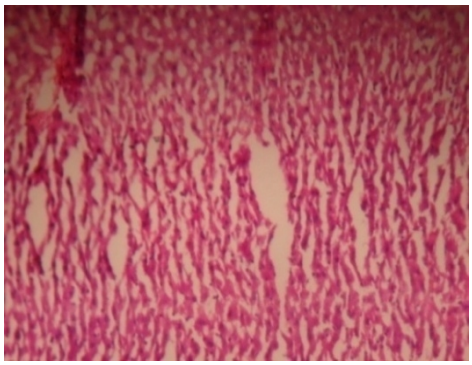
BRAIN



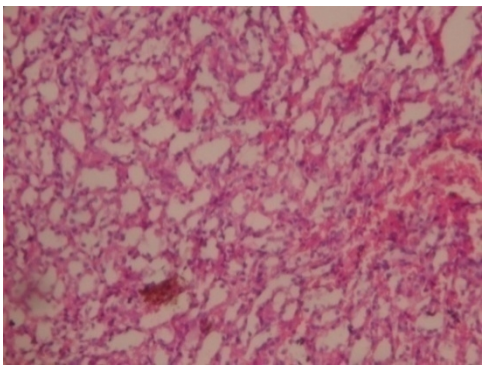
INTESTINE



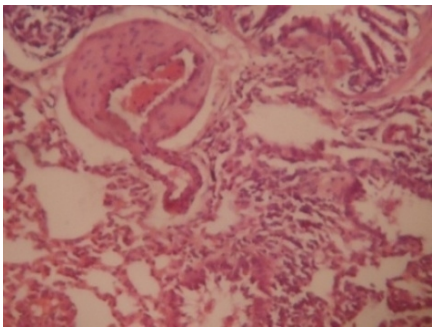
LIVER



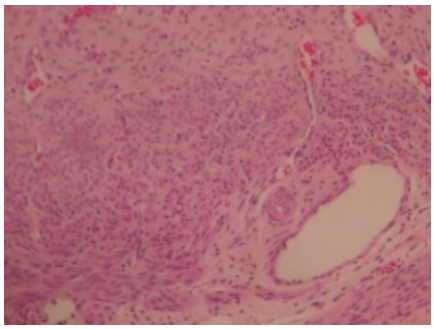
KIDNEY



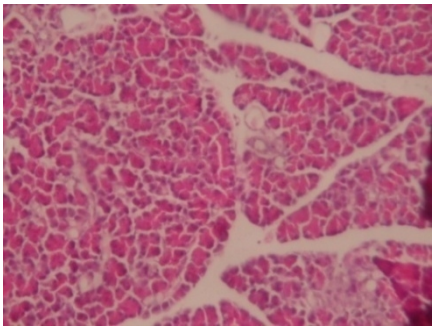
LUNG



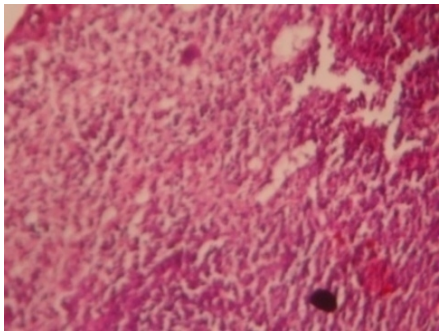
OVARY



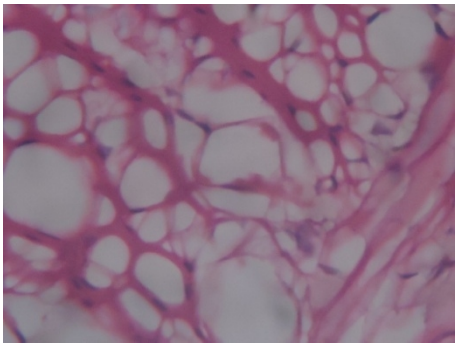
PANCREAS



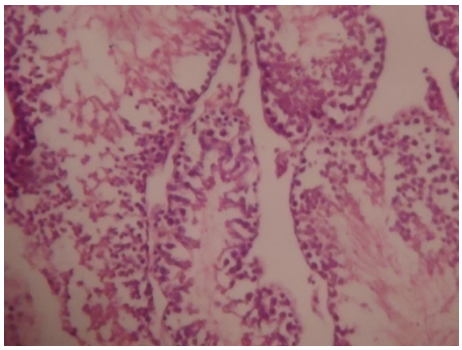
SPLEEN



STOMACH



TESTIS



HEPATOPROTECTIVE ACTIVITY OF PAVATTAI VER KUDINEER CHOORANAM AGAINST ALCOHOL INDUCED IN ALBINO RATS

INTRODUCTION

Liver diseases have become one of the major causes of morbidity and mortality all over world. In spite of tremendous advances in modem medicine, there are hardly any reliable drugs that protect the liver from damage and/or help in regeneration of hepatic cell. Many active plant derived products are frequently utilized to treat a wide variety of clinical diseases including liver disease. Therefore, searching for effective and safe drugs for liver disorders are continues to be an area of interest. The liver is one of the few organs of highly specialized function whose cells can undergo an astonishing degree of regeneration. Modern allopathic treatment does not hold promise to cure liver disease perfectly.

A number of medicinal plants are used in traditional system of medicine for the management of liver disorders. Liver disease is still a worldwide health problem. Unfortunately, conventional or synthetic drugs used in the treatment of liver diseases are inadequate and sometimes can have serious side effects1. In the absence of a reliable liver protective drug in modern medicine there are a number of other herbal preparations to treat successfully liver diseases remain one of the serious health problems.

In view of severe undesirable side effects of synthetic agents, there is growing focus to follow systematic research methodology and hence the auther intake to evaluate scientific basis for the traditional siddha medicines like Pavattaiver Kudineer Chooranam that are claimed to possess hepatoprotective activity.

MATERIALS AND METHODS

Animals

In this experiments thirty healthy male albino Wistar strains rats, 3 months of age, weighing 240–258 g were selected for acclimation for a period of two weeks in laboratory animal house and maintained under standard conditions of temperature 27 ± 2^0C, relative humidity of 60 ± 5% and 12: 12 hour light: dark cycle prior to experimentation. They were given standard pellet diet (Sai durga foods Ltd. Bangalore) and tap water ad libitum. The experiments were performed during day (08:00-16:00 h). The institutional animal ethical committee had approved to the study protocol**.** (XIII/VELS/PCOL/30/2000/CPCSEA/IAEC/08.08.2012).

Experimental Design

The animals were fed with standard pellet diet and water ad libitum. The experimental animals were divided into five groups each contains six animals as per the drug treatment plan. First group served as normal control and the rest served as experimental groups.

GROUP I: Normal control (n=6, the animals were given normal saline only)

GROUP II: Hepatotoxic control, the animals were given ethanol 50% 12ml/kg for 21 Days)

GROUP III: Treatment group (n=6, the animals were given alcohol + Pavattaiver Kudineer Chooranam 250mg/kg for 21 days)

GROUP IV: Treatment group (n=6, the animals were given alcohol + Pavattaiver Kudineer Chooranam 500mg/kg for 21 days)

GROUP V: Standard group, the animals were given alcohol +Silymarin (25 mg/kg) for21 days) Rats were treated as per the treatment protocol. Body weights of these rats were monitoredsequentially in control and experimental animals for a period of 21 days. After collection of the blood, the liver was removed and washed several times with normal saline. Part of the liver was taken for biochemical estimations and the remaining tissue was preserved in 10%v/v formal saline buffer for histopathological analysis.

Biochemical Assays

At the end of the drug treatment period, all the animals were anaesthetized by application of light chloroform and blood samples were collected from a group of animals from dorsal aorta by heparinized syringe in vacutainer tubes. Plasma and serum samples

were separated kept at – 20˚C for biochemical analysis. The animals were sacrificed by cervical decapitation, the perfused liver of each animal was dissected out and washed with isotonic solution, and their wet weight was recorded. The liver homogenate was prepared using phosphate buffer solution for biochemical analysis. The biochemical parameters analyzed from serum, plasma and liver homogenate are presented in the Graph.

Histopathological studies

After treatment, liver of all animals from each respective groups were dissected out and a portion of liver tissue section of nearly 5 μm thickness were fixed in Bouin's fixative, dehydrated by varying percentage of ethanol and stained with haemotoxylin and eosin. Histopathological examination of the liver sample was carried out by taking thin transverse section with the help of microtome and permanent slides were prepared. The slides were examined under microscope. Histology of normal liver, damaged liver and recovered liver was studied and compared.

Statistical analysis

The data was represented as mean ± S.E.M. Results were analyzed statistically by one-way ANOVA followed by Dunnett's multiple comparison test using Prism software (Version 4). The minimum level of significance was set at $P < 0.05$.

RESULTS AND DISCUSSION

The acute toxicity study revealed the absence of lethality among the tested animals when the Pavattaiver Kudineer Chooranam was administered as a single dose (2000, 5000 mg/kg). There were no signs of any gross behavioral changes indicating the safe use of the Pavattaiver Kudineer Chooranam. The result of the biochemical tests revealed the elevation of serum enzyme level in alcohol treated group compared to control group, indicating that alcohol induced liver damage. A significant reduction was observed in SGPT, SGOT levels in the group treated with Pavattaiver Kudineer Chooranam.

The ALP and bilirubin in serum was significantly ($P < 0.01$) increased in alcohol treated animals when compared to control. The Pavattaiver Kudineer Chooranam treatments significantly ($P<0.01$) reversed the levels of AST, ALP and bilirubin alcohol treated rats. Normally, AST and ALP are present in high concentration in liver. Due to hepatocyte necrosis or abnormal membrane permeability, these enzymes are released from the cells and their levels in the blood increases. ALT is a sensitive indicator of acute

liver damage and elevation of this enzyme in non hepatic diseases is unusual. ALT is more selectively a liver paranchymal enzyme than AST.

Assessment of liver function can be made by estimating the activities of serum ALT, AST, ALP and Bilirubin which are enzymes originally present higher concentration in cytoplasm.When there is hepatopathy, these enzymes leak into the blood stream in conformity with the extent of liver damage. The elevated level of these entire marker enzymes observed in the group II, alcohol treated rats in this present study corresponded to the extensive liver damage induced by toxin. The reduced concentrations of ALT, AST and ALP as a result of Pavattaiver Kudineer Chooranam administration observed during the present study might probably be due in part to the presence of active principles like flavonoids, alkaloids and tannins. Bilirubin is one of the most useful clinical clues to the severity of necrosis and its accumulation is a measure of binding, conjugation and excretory capacity of hypatocyte. Silymarin (25 mg/kg) treated animals also showed significant decrease in AST ($P<0.01$), ALT, ALP and bilirubin ($P<0.01$) levels when compared to the treated with alcohol alone rats. A comparison of the liver section of animals treated with ethanol showed a high degree of damage characterized by cell vacuolation, pyknotic and degenerated nuclei and wall of bile capillaries.

The normal architecture of the liver was lost. The intralobular vein was badly damaged with wide spaces at some sinusoids. In the liver section of the animals treated with Pavattai Ver Kudineer Chooranam (250 and 500mg/kg b.w.) + ethanol, the number of hepatocytes with normal nucleus was clearly appeared. Liver is a versatile organ in the body concerned with regulation of internal chemical environment. Therefore, damage to the liver inflicted by hepatotoxic agents is of grave consequence. It was observed from the morphological examination of liver that treatment with alcohol resulted in liver enlargement, which turned pale brown in colour. The hepatic cells of rats treated with Pavattaiver Kudineer Chooranam (250 mg/kg b.w.) and intoxicated with ethanol were radially arranged. The vacuolation was present, similar to that of normal.

The recovery was comparable to that with silymarin, a standard hepatoprotective agent

The intralobular vein was normal in structure, but the wall was damaged. No pyknosis in the nucleus was seen. In general, alcohol caused marked damage of rat hepatocytes in the form of fatty degeneration, cytoplasmic vacuolation, centrilobular necrosis, ballooning degeneration, nodal formation and fibrosis with endothelial swelling and disruption. The histopathological studies are the evidence of efficacy of drug Pavattaiver Kudineer Chooranam as liver protectant.

Treatment of Pavattaiver Kudineer Chooranam with alcohol exhibits less damage to the hepatic cells as compared to the rats treated with pure alcohol alone. The sections of the liver treated with Pavattaiver Kudineer Chooranam and alcohol reveals better hepatoprotective activity. Hence, the results of histopathological study also support the results of biochemical parameters.

CONCLUSION

The acute toxicity study revealed there were no signs of any gross behavioral changes indicating the safe use upto 5g/kg in mice. Decrease in serum bilirubin after treatment with the Pavattaiver Kudineer Chooranam in liver damage induced by alcohol, indicated the effectiveness in normal functional status of the liver. The normal cellular architecture was retained as compared to silymarin, thereby confirming the protective effect of the Pavattaiver Kudineer Chooranam.

In accordance with these results, it may be hypothesized that active principles,of the drug could be considered responsible for the hepatoprotective activity. The Pavattaiver Kudineer Chooranam has shown the ability to maintain the normal functional status of the liver. From the above study, it can be concluded that the Pavattaiver Kudineer Chooranam, is proved to be one of the better remedy for liver ailment.

DISEASE ASPECT

SIDDHA ASPECT:

கல்லீரல் நோய்கள்[7]

வேறுபெயர் : வலப் பாட்டீரல் நோய், மாந்தக் கட்டி, கல்மாந்தம், யக்குதம் எனப் பெயர்களுண்டு.

இயல்பு:

இயற்கையாக மார்பின் கீழ் வலப்பக்கம் உள்ள வலப்பாட்டீரல், அப்பக்கமுள்ள கடைவிலா எலும்பு வரையிலும் நிற்காமல் தன்னளவில் மேலுங்கீழுமாகப் பெருத்துக்கொண்டே வருவதும், தன் இயற்கைத் தொழிலை இழப்பதும், அல்லது அளவில் மிகச்சிறுத்துக் கொண்டே வந்து பல நோய்களையும் துணையாக்குவதுமான இயல்பைப் பெறும் நோயாம்.

நோய் வரும் வழி

மிகுந்த அளவில் உணவையுண்ணல், உடற்கொவ்வாப் பொருள்களைக் கொள்ளல், கள், சாராயம், முதலிய மயக்கத்தைத் தரும் குடி வகைகளை அளவு கடந்து குடித்தல், பெண்களின் கூட்டால் வரும் நோய் ஆகியவற்றாலும், சுரம் முதலிய நோய்கட்டுக்குத் துணையாகவும் வருவதாகும். அன்றியும் சிறு குழந்தைகட்கும் பால், உணவு முதலிய வேறுபாடுகளாலும் வருவதுண்டு.

முற்குறி:

வாய் கைத்தல், சுவையின்மை, வாய் நீருறல், பசியின்மை, உண்ட உணவு செரியாமை, காலையில் பித்தமாக வாந்தியாதல், முகம் சுருங்கி முகஎலும்பு எடுத்துக்காட்டல், கை கால் சூம்பி வயிறு நாட்குநாள் பெருத்துக் கொண்டே வருதல், அடிக்கடி சுரங்காய்தல் என்னும் குறிகளைக் காட்டி வலப்பாட்டீரல் பெருத்துக் கொண்டே வரும்.

நோய் எண்:

குற்ற அளவாக மூன்று வகைப்படும். அவை வளிக் கல்லீரல் நோய், அழல் கல்லீரல் நோய், ஐயக் கல்லீரல் நோயாம்.

குறி குணங்கள்

வளிக்கல்லீரல் நோய்:

உடலின் கண் வளிக் குற்றம் பெருகித் தனக்குத் துணையாக அழல் குற்றத்தையுங் கூட்டி, சுரத்தையுண்டாக்கி, உடலை நாளுக்கு நாள், இளைக்கச் செய்தல், உடல் கருநிறமாதல், உடல் வன்மை குறைதல், வயிறு பெருத்துக் கொண்டே வருதல், இரச நாளங்களின் முடிச்சுகள் கனத்துத் தொடை இடுக்குகளிலும், அக்குள், வயிறு, கழுத்து, மார்பு இவற்றில் தோன்றல் என்னுங் குறிகளைக் காட்டி, நாட் செல்லச் செல்லப் படுக்கையிலிருத்தித் துன்புறுத்தும். நோய் முதியங்காலையில் உடலின் குருதி குறைந்து உடல் வெளுத்துக் கால், கை, வயிறு ஆகியவகைகளும் வீங்கிக்காணும்.

அழல் கல்லீரல் நோய்:

இதனில் அழல் குற்றமே தனித்துண்டான நோயாதலால், அழல் குற்றத் தினளவாகப் பிறந்த குருதிகெட்டு, கல்லீரலில் இயற்கைச் செயலுங் குன்றிப் பித்துநீரை உடல் முழுமையும் வீசி உடலை மஞ்சள் நிறமாக்கும். அன்றியும் வாய் கைத்தல், பித்து வாந்தியாதல், முகஞ் சுருங்கல், கை கால் வீங்கல், குருதியின் வன்மையின்மையால் உடல் வெளுத்துக்காணல் என்னுங் குறிகளைக் காட்டி, பெரு வயிறுநோயையும் பின் தொடரச் செய்யும்.

ஐயக்கல்லீரல் நோய்:

இயற்கையாக, இந்நோயில் மிகுந்த அழல் குற்றத்தோடு ஐயக்குற்றமுங் கூடிவரு நோயாகையால், கல்லீரல் மிகப் பெருத்து, தொடுகைக்குக் கட்டி முட்டியாகக் காணப்படும். அன்றியும் கல்லீரலின் பெருக்கத்தையும் அதனின் மேலெழுந்த எழுச்சியின் வடிவையும் காணலாம். ஈரலின் பெருக்கத்திற்கேற்ப, மிகுந்த சுரமும், வாந்தியும் தலைநோயும், அடிக்கடி கழிதலும், சிறுநீர் சிவந்து, அளவில் குறைந்து இழிவதுமான குறி குணங்களோடு, மஞ்சள் (காமாலை) நோய், உடல் வீங்குதல், உடல் வெளுத்தல் ஆகிய நோய்களும் துணைக்கொண்டு பெரு வயிறு நோய் தொடருவதும் உண்டு.

நோய், ஊதல் (சோகை) நோய், பெருவயிறு நோய் ஆகிய இந்நான்கும் ஒன்றன்பின் ஒன்றாகத் தொடருவது இயல்பாம்.

கல்லீரல் நோய் அழல் குற்றத்தின் பெருக்கால் வருநோயாதலாலும் இந்நோய்களில் எந்நோய் முன் பிறப்பினும் அதனைப் பற்றியே மற்றதும் தொடருமாகையாலும் இவ்விரு நோய்க்கும் மற்ற முதலிய வேறுபாடுகள் ஒன்றுபட்டே காணப்படும்

குற்ற வேறுபாடு

இந்நோய் அழல் (பித்த) குற்றத்தாலெழுந்து தனக்குத்துணையாக மற்ற இரு குற்றங்களைக் கூட்டிக் கொண்டு பரவுகாலின் செயலைக் கெடுத்து வருநோயாம்.

அழல் குற்றமே தன்னளவில் கெடுமாகையால் உடற்கட்டுகளில் இரசமும், குருதியும் வன்மையிழந்து உடல்வற்றிப்போதலும், கழிச்சல் வாந்தியுண்டாவதும், பித்துநீர் இயற்கை வழி செல்லாததாலுமுண்டான கெடுதல்களைப் பிறப்பிக்கும்.

உடலமையுமிக்கேடுகளால், கீழ்நோக்குக்கால், மேல்நோக்குக்கால் ஆகிய இவ்விரண்டுங் கூடி நோயைப் பெருக்கும்.

MODERN ASPECT

ALCOHOLIC LIVER DISEASE:[16]

Chronic and excessive alcohol ingestion is one of the major causes of liver diseases, each time liver filters alcohol some of the liver cells die, liver can develop new cells, but prolonged alcohol misuse over many years can seriously damage the liver and is the cause of Alcoholic Liver Diseases.

ETIOLOGY:

Quantity and duration of alcohol intake are the most important risk factors involved in the development of Alcoholic Liver Diseases. Severe alcoholic in men is an intake of>60 to80g/d of alcohol for 10 years, While women are at increased risk for developing Similar Degree of liver injury by consuming 20 to 40 g/d .

COMMON SYMPTOMS:

Dry mouth

Fatigue

Nausea

Loss of appetite

Pain in the abdomen

Weight loss

Enlarged liver

Jaundice

STAGES OF ALCOHOLIC LIVER DISEASES: [16]

There are three main stages of ALD although, there is often on, overlab between each stage.

ALCOHOLIC FATTY LIVER DISEASES:

Drinking of large amount of alcohol even for only a few days,can Lead to a build up of fatty acids in the liver.

ALCOHOLIC HEPATITIS:

Alcoholic hepatitis is second more serious stage of ALD, prolonged alcohol misuses over many years, can cause the tissues of the liver to become inflamed.this is known as alcoholic hepatitis.

CIRRHOSIS:

Cirrhosis is the final stage of ALD cirrhosis happens when prolonged inflammation causes scarring of the liver and loss of function.

PATHOLOGY:

The liver has a limited repertoire in response to injury,fatty liver is the initial and most common histologic response to hepatotoxic stimuli,including excessive alcohol ingestion.the Accumulation of fat with in the perivenular hepatocytes coincides with the location of alcohol dehydrogenase,the major enzyme renponsible for alcohol metabolism

COMPLICATIONS:[17]

Complication of alcoholic liver disease include

- Portal hypertension
- Hepatic encephalopathy

INVESTIGATION:[18]

- Complete blood test
- Liver function test
- Abdominal CT scan
- USG abdomen
- Liver biopsy

TREATMENT:

The most important part of treatment is to stop using alcohol completely, if liver Cirrhosis has not yet occurred the liver can heal itself .

CLINICAL STUDY

The study was conducted on patients with Kalleeral noi (Alcoholic Liver Diseases) Patients Satisfying the inclusion criteria. The study was conducted at the OPD/IPD of Ayothidoss Pandithar Hospital of the National Institute of Siddha, Tambaram sanatorium, Chennai-47.

Sample size:

The trial size was 20 patients.

Inclusion criteria:

Age : 20 to 60 years

Sex : Male

Symptoms:

- Anorexia
- Malaise
- Nausea
- Vomiting
- Upper abdominal pain
- Jaundice

Patient who are willing to provide blood for lab investigation Patient willing to sign the informed consent starting that he/she will conscientiously Stick to the treatment, during 30 days but can opt out of the trial of His/her own Conscious discretion.

Exclusion criteria:

Cardiac diseases

Hepatic failure

Pregnancy and laction

Any other serious illness

Withdrawal criteria:

Development of any adverse reaction

Occurance of any other serious illness

Non-co operation of the patient

TRIAL DRUG AND DURATION

Drug; **:**Pavattaiver kudineer chooranam 50gm, bd (50ml)

After a food

Duration of the treatment: 30 days.

Conduct of the study:

Kalleeral noi patients satisfying inclusion and exclusion criteria were admitted to the Ttrial. Informed consent was obtained from the patients. Routine investigations like Blood test, Uurine Test, were carried out before and after the trial treatment. For in patients the drug was

Administered daily. For out patients the trial drug was issued for seven days course. They were advised to visit the OPD once in 7 days. At each visit they were clinically assessed.

Clinical observation:

For the clinical study of "Pavattaiver kudineer Chooranam'' on Kalleeral noi. 20 male patients were selected.

Among 20 patients were in male.

According to age wise distribution 20%were in 20-30years,30 % were in 31-40years and 50% were in 41-60 years.

Among 20 patients, All patients were affected from Anorexia, 17 patients were affected From Malaise, 16 patients were affected from Nausea, 15 patients were affected from Vomiting,16 Patients were affected from upper Abdominal pain, and 7 patients were suffering From jaundice.

From the clinical study 85% of patients relieved from Anorexia, 76.48% of patients Relieved from Malaise, 68.75% of patients relieved from Nausea, 80% of patients relieved from Vomiting, 75% of patients relieved upper Abdominal pain, 57.15% of patients relieved from Jaundice and no adverse effects were observed during trial period**.**

DISCUSSION

The principle aim of this study was to assess the pre-clinical safety and efficacy and to Evaluate the therapeutic efficacy of the drug Pavattaiver Kudineer Chooranam in the Management of kalleeral noi.

As per Siddha text, in Kalleeral noi vathaa and pitha humors were deranged. Vatha thathu is responsible for the functioning of the Udal thathukal uniformly. Hence derangement of the Vatha kutram leads to impairment in Udal thathukal and in turn produces symptoms like Tiredness, body ache, mental distress etc.

Pitha thathu has the basic function of production and maintenance of the blood Environment and also for appetite and proper digestion of foods. Hence Pitha thathu when Deranged produces symptoms like nausea, vomiting.

The trial drug Pavattaiver Kudineer Chooranam possess kaippu, kaarppu suvai and kaippu Suvai hence it balances the deranged pittha kutram. In addition to this it also have Stomachic Activity which rectifies the symptoms present in Kalleeral noi like pasi inmai, suvai inmai.

Hence administration of the trial drug pavattaiver kudineer chooranam was effective in the management of Kalleeral noi.

Role of **Alkaloid**[19] in treating alcoholic liver disease. It possesses anti-oxidant property and Causes induction of anti-oxidant enzymes like Superoxide dismutase and reduces glutathione & Catalase.

Toxicological studies:

Acute oral toxicity study:

Based on these findings,no toxic effect was observed upto 5000mg/kg of Pavattaiver Kudineer Chooranam treated via oral route over a period of 28days. the dose of 5000mg/kg did not exhibit any mortality in rats. As per OECD 425 guidelines.

Pharmacological studies:

In the pharmacological studies the drug Pavattaiver kudineer chooranam exhibits significant Hepatoprotective activity.

Clinical observation:

From the clinical study 16 (80%) patients had a significant reduction in the LFT levels after the treatment.

Bio-statistics:

Statistically, the paired‘t’ test shows statistical significance for the symptoms before and after the treatment ($p<0.0001$).

SIDDHA ASPECT:

பாவட்டைவேர்:

சுவை	:	கைப்பு, கார்ப்பு
தன்மை	:	வெப்பம்,
பிரிவு	:	கார்ப்பு.

கைப்பு சுவையின் தன்மை,

வாய்நீருறல் அழற்சியும் தணிக்கும்."

கல்லீரல் நோய் அழல் குற்றத்தின் பெருக்கால் வருநோயாதலாலும் அதனைப் பற்றியே மற்றதும் தொடரும், கைப்பு சுவை பித்த குற்றத்தை சமபடுத்தும் என்பதால் **கல்லீரல்** நோய்களைப் போக்கும் தன்மையுள்ளது.[25] வெப்ப வீரியத்தின் தன்மையானது வாதத்தை சமப்படுத்தும் என்பதால், இதை **கல்லீரல் நோய்க்கு** வழங்கலாம்.

Hence, pavattaiver kudineer chooranam is a better drug of choice in the management of kalleeral Noi

SUMMARY

The literary evidence strongly support the Hepatoprotective activity of Pavattaiver Kudineer choornam. The drug Pavattaiver has been selected for this study to evaluate its efficacy on the Hepatoprotective activity in the management of Kalleeral noi (Alcoholic Liver Disease).

Biochemical analysis of the drug Pavattaiver kudineer choornam reveals the presence of, **Iron, phosphate, alluminum, starch, sodium, alkaloids, reducing sugars and ammonia.**

The Preclinical evalution (acute oral toxicity study) of the drug was carried out as per OECD 425 guideline in Vels College of pharmacy, Chennai. The result shows safty of the drug for human administration

In the toxicological studies, the drug does not exhibit any mortality upto the dose of 5000mg/kg/po. In the pharmacological studies the drug Pavattaiver kudineer chooranam exihibits significant hepatoprotective activity.

From the clinical study 85% of patients relieved from Anorexia, 76.48% of patients relieved from Malaise, 68.75% of patients relieved from Nausea, 80% of patients relieved from vomiting, 75% of patients relieved upper Abdominal pain, 57.15% of patients relieved from Jaundice and no adverse effects were observed during trial period**.**

From the statistical analysis-paired 't' test, the drug pavattaiver kudineer Chooranam is satistically significant.

Statistically, the paired 't' test shows statistical significance for symptoms before and after the treatment.($p<0.0001$)

The drug Pavattaiver kudineer Chooranam has

- Hepatoprotective Activity.
- No side effects
- No undoing effects
- Encouraging clinical results.

From the clinical and statistical analysis it is proved that the drug pavattaiver kudineer chooranam is statistically significant on Hepatoprotective activity, in the management of Kalleeral Noi (Aalcoholic Liver Disease)

CONCLUSION

From the literary evidences, phytochemical review and bio chemical, toxicological and pharmacological studies, it is concluded that drug Pavattaiver kudineer chooranam has significant Hepatoprotectiv Activity. Thus it gives a new hope in the management of Kalleeral Noi (Alcoholic Liver Disease).

INTRODUCTION

Kaanakadi (urticaria):[20]

Hives, neetle rash is a common skin condition characterized by the acute development of the itchy weals or swellings in the skin. Because of leaky dermal vessels, Urticaria is described as acute it last less than 6 weeks, and chronic if it persists beyond this.

Prevalence:[21]

Approximately 15% of people experiance urticaria at some times in the lives the prevalence rate has been assessed as 1-5 per 1000, Chronic urticaria occurs in at least 0.1% and Possibily up to 3% of the population. Chronic urticaria is twice as common in women as in men.

In Indian study showed that out of 500 cases of urticaria 37% were suffering from physical urticaria[22]

In siddha system of medicine the urticaria can be clinically compared with Kaanakadi.Gandhaga Maathirai is a Herbo mineral formulation mentioned Anuboga vaithiya Nava Needham part 6, The ingredients of this formula are Gandhagam and Changan (Azima tetracantha)Lam. leaves

As per siddha text the drug gandhagam has kaippu and thuvarppu suvai, changan has kaippu suvai as per the siddha principle the kaippu and thuvarppu suvai are very effective for skin disease Like kaanakadi Kaippu suvai has antidote and thuvarppu suvai has blood purification action.[23] the previous studies report showed that Azima tetracantha has antifungal[24], antimicrobials[25], antibacterial[26], and wound healing properties[25].

Gandhaga maathirai has not been evauvated for H1 histamine antagonistic activity on kaanakadi Based on the literature evidence hence the researcher has selected the Gandhaga Maathirai, for H1 histamine antagonistic activity and therapeutic efficacy on kaanakadi.

AIM:

To evaluate the safety and efficacy of Gandhaga Maathirai for H_1-histamine antagonist Activity on Kaanakadi (Urticaria).

OBJECTIVE:

Primary objective:

To evaluate the H_1-Histamine Antagonistic activity of Gandhaga Maathirai for Kaanakadi (Urticaria).

Secondary objective:

To evaluate the efficacy of Gandhaga Maathirai in the management of Kaanakadi (Urticaria).

1. Collection of evidences in siddha literature.

2. Collection of evidences in botanical aspects.

3 .Standard operative procedure

4. Biochemical analysis

5. Physical properties

6. Atomic Absorption Spectrophotometer

7. Pharmacological study

8. Clinical study A pilot study on trail medicine

MATERIALS AND METHODS

STANDARD OPERATIVE PROCEDURE

Collection of the raw drug:

The raw drug was collected from The from Ramasamy chetty shop paris Chennai, and During in chennai. Authenticated by competent in department of gunapadam.

Purification process:

Purification of Gandhagam

Gandhagam was purified by Thooma pudam using cow's milk for 3 times[27]

Preparation of the test drug:

The purified Gandhagam was grinded in to tiny particles and Soaked in juice of Changan Leave (Azima tetracantha). which placed in the sun light, And have to be dried, The dried Gandahagam, soaked in that juice Again.This process is repeated for 30 times, and Grinded in the Kalvam, made in to tablet in the size of kundri (130mg). The tablet is dried in the sun shadow.

LABELLING:

Name of the preparation	:	Gandhaga Maathirai
Colour	:	Mild green colour
Dose	:	130 mg b.d.
Adjuvant	:	Palm jaggery
Duration	:	40 days
Indication	:	Kaanakadi
Date of manufacture	:	The drug was prepared in two batches. 10/3/12, 15/5/12
Expiry	:	1year from the date of manufacture

GANDHAGAM BEFORE PURIFICATION

PURIFIED GANDHAGAM

Azima tetracantha (Lam)

GANDHAGA MAATHIRAI

RVIEW OF THE LITERATURE

GUNAPADAM ASPECT

கந்தகம்

கந்தகம்[28]

இப்பொருள் காரிழையின் நாதம், பரை, வீரியம், அதீதப் பிரகாசம்,

பீஜம், செல்விவிந்து, சக்தி, சத்திபீசம், செந்தூரத்தாதி, தனம், தேவியுரம், நாதம், நாற்றம், பரை நாதம், பொன்வர்ணி, இரச சுரோணிதம் என்ற வேறு பெயர்களினாலும் வழங்கப்படுகின்றது.

பாடாணங்கள் அறுபத்து நான்கில்,

- பிறப்புக் கந்தகம்,
- வைப்புக் கந்தகம்,
- கோழித்தலைக் கெந்தி வைப்பு,
- வாணகெந்தி வைப்பு

என்று நான்கு பாடாணங்கள் கூறப்பட்டுள்ளன. இவற்றுள் முற்கூறப்பட்ட ஒன்று மலையின் பிறக்கின்ற சரக்காகும். பின்னே கூறப்பட்ட மூன்றும் பிறப்புக்கந்தியினை முதன்மையாய்க் கொண்டு மற்றையசரக்குகளின் உதவியால் செய்யப்படுகின்ற சரக்குகளாகும். கோழித்தலைக் கெந்தியின் நிறம் மாத்திரம், சூட்டின் நிறம் என்று குறிப்பிடப்பட்டுள்ளது மற்றும் கெந்தகம் பேதம் கூறுமிடத்து, நால்வகை கூறி நால்வகைச் சாதிக்கொப்பிட்டு, அவைகளின் நிறமும் பலனும் கூறப்பட்டுள்ளன.

1. வெண்மை நிறத்தையுடையது; எல்லா நோய்களையும் தீர்க்கும்.
2. கிளி மூக்குச் சிவப்பு நிறத்தையுடையது. நவலோகத்தை ஏமமாக்கும்.
3. பொன்மை நிறமுடையது; குற்றமற்ற நெல்லிக்காய் போன்று இருக்கும்; சூதகத்தோடு உறவாகிச் சுத்தமாய் இருக்கும்
4. காகத்தின் நிறத்தையுடையது; அகப்பாடாது; அகப்பட்டால் நரை திரைகள் அற்றுப்போம்.

நிற்க, பதார்த்த குண சிந்தாமணியில் நெல்லிக்காய்க் கந்தகம், வாண கந்தகம் இவைகளின் குணங்கள் மாத்திரம் கூறப்பட்டிருக்கின்றன. ஆயினும், மருந்துகளில் கையாளப்படுவது நெல்லிக்காய்க் கந்தகமே யாகும் என்று உணர்க.

நேபாளம்,காஷ்மீர்,ஆப்கானிஸ்தானம், பர்மா முதலிய இடங்களில் கந்தகம் கிடைக்கின்றது. தாது தாவர ஜீவப் பொருள்களிலும் இது கலப்புற்றிருக்கின்றது.

மற்றும், "**சொல்லுமே தாம்பிரத்தைக் கெந்தி கொல்லும்"** "கந்திக்கினமு மிரசந்தா னென்றாரே" என்ற வடிகளால் இதன் பகையையும் நட்பையும் அறியலாம், "**செந்தூரத்தனக்காதி சிலை கெந்தி தாளகமும்"** என்ற அடியால், செந்தூரம் செய்வதற்குக் கந்தகம் உபயோகமாம் என்பதனையும் உணர்க.

சுவை, செய்கை, குணம்

இதனுடைய பெயரே இதற்கு மணமுண்டென்பதை விளக்கும்.

கந்தகம், கைப்புச் சுவையையும், துவர்ப்புச் சுவையையும் உடையது. இதற்குப் பித்தநீரை அதிகப்படுத்தும் செய்கையும், மலமிளக்கிச் செய்கையும், உடல் தேற்றி, வியர்வை பெருக்கி, கிருமிநாசனி ஆகிய செய்கைகளும் உண்டு. சிறிய அளவில் கந்தகத்தை உள்ளுக்கு அருந்த அஂது உடம்பில் சேர்ந்து வியர்வை, பால், சிறுநீர், இவற்றின் வாயிலாக வெளிப்படுவதைக் காணலாம். தோல், அசுகங்களின் சளிச் சவ்விலுள்ள கோளங்களின் சுரப்பை அதிகப்படுத்தும். விரேகியில் சிறப்பாகச் செயல்பட்டு **சுரப்பை** அதிகப்படுத்தும். கந்தகத்தை, அதிக அளவில் அருந்தப் பேதியை உண்டு பண்ணும்.

கீழ்ச் செய்யுட்களால் கந்தகங்களின் பொதுக் குணத்தை உணர்க. நெல்லிக்காய்க் கந்தகத்தின் குணம்

"நெல்லிக்காய்க் கந்திக்கு நீள்பதினெண் குட்டமந்தம்
வல்லை கவிசைகுன்ம வாயுகண்ணோய் – பொல்லா
விடக்கடிவன் மேகநோய் வீறுசுரம் பேதி
திடக்கிரக ணீகபம் போந் தேர்"

(பொருள்) நெல்லிக்காய்க் கந்தகத்தினால் பதினெண்குட்டம், மந்தம், கல்லீரல், வீக்கம், பெருவயிறு வகைகளுள் ஒன்றாகிய கவிசை, குன்மவாயு, கண்ணோய்கள் கொடுமையைச் செய்கின்ற விடக்கடிகள், நாட்பட்ட மேக நோய்கள், வாத சுரம், பேதி, நாட்பட்ட கிரகணி, கபம் முதலியன நீங்கும் .

வாணக் கந்தகத்தின் குணம்

“வாணக் குழாய்க்கந்தி வாசனையைக் கண்டவுடன்

காணக் கிருமி சொறி காணாவாம் – தோணும்

பெருவியா திக்கூட்டம் பேருமத னூலின்

மருவியா முங்கொடியே வாழ்த்து”

(பொருள்) வாண மருந்துக்கான குழாய்க் கந்தகத்தின் வாசனையைக் கண்டவுடன் இரச இரத்த தாதுக்களில் பிறந்த கிருமிகள், சொறி, குறைநோய்க் குட்டங்கள் நீங்குமென்ப மற்றும் இதனை, நாட்பட்ட கீல் வாதம், சுவாசகாசம், மாரடைப்பு, இருமல், கண்டமாலை, மூலம், குத நெகிழ்ச்சி போன்ற நோய்களுக்கும் உபயோகிப்பதுண்டு.

கந்தகம், தாய் மகவை வளர்ப்பது போல நோய்களின் வெப்பத்தை மாற்றி உடம்பைத் தேற்றுவிக்குமென்பதை,

“மாதர் மகவை வளர்ப்பதுபோ லேயுடம்பை

யாதரவா கத்தேற்றி யாக்கையினால் – மீதாக

மேவி யடர்நோயின் வெப்பத்தை மாற்றுதலாற்

றேவியுர மென்பதுடல் தேர்.”

என்னும் தேரன் பொருட் பண்பு நூலில் கூறப்பட்ட செய்யுளால் அறிக.

கந்தகம் சேரும் காணாகடிக்கான மருந்துகள்

- கந்தக லேகியம்:[27]

  அளவு : 1/4 முதல் 1/2 வராகனெடை

  தீரும் நோய்கள் : கடிவிடங்கள்,மேவூரல்,மேகசூலை

- கந்தக குழிதைலம்:[29]

  அளவு : வராகன் எடை இரு வேளை

  காலம் : அளவு 40 நாள்

  தீரும் நோய்கள் : கருங்குட்டம்,மேகவூரல்,கருங்குட்டம்

- கந்தக பற்பம்:[27]

  அளவு : 2-3 குன்றி

  தீரும் நோய்கள் : சொறி சிரங்கு,மேகவூரல்

- கந்தக பாக பற்பம்:[27]

  அளவு : 4-5 குன்றி

  தீரும் நோய்கள் : சொறி சிரங்கு, மேகபுண்

- கந்தக நெய்:

  அளவு : 5 முதல் 10 துளி

  தீரும் நோய்கள் : கடிவிடங்கள்,மேவூரல்,மேகசூலை, சொறி சிரங்கு

- கறுத்த குழம்பு:[30]

  தீரும் நோய்கள் : எல்லா விதக்கடிவிடங்கள், காணாகடி,வண்டுகடி

- கந்தக எண்ணெய்:[30]

அளவு	:	488மிகி(பணவெடை)
தீரும் நோய்கள்	:	கிரந்திப்புண்,வண்டுகடி, சிரங்கு, சொறி, குட்டம், 18வகை குட்டம்
காலஅளவு	:	40 நாள்

- நீரடி முத்து சூரணம்:[29]

அளவு	;	11/2 மிளகளவு, தினம் இரு வேளை
காலஅளவு	:	40 நாள்
தீரும் நோய்கள்	:	பூச்சி கடிகள்,குக்குடம், தேமல்,படர்தாமரை

REVIEW OF THE LITERATURE

சங்கன்: Azima tetracantha Lam

GUNAPADAM ASPECT:[8]

வேறு பெயர்கள்:

சங்கசெடி

நற்சங்கன்

முட்சங்கன்

வளருமிடம்:

இது தென்னாட்டின்,கீழ்க்கரை ஓரங்களிலும், இலங்கையிலும் பயிராகும் ஒருவகை முட்செடி, இலை தடித்தும்,இலையின் நுனியில் முள் உள்ளது.

பயன்படும் உறுப்பு:

இலை : வேர்,பால்

சுவை : கைப்பு

தன்மை: வெப்பம்

,

பிரிவு : கார்ப்பு

செய்கை:

சிறுநீர்ப்பெருக்கி

வெப்பமுண்டாக்கி

துவர்ப்பி

உரமாக்கி

முறைவெப்பகற்றி

குணம்:

இதன்இலைக்கும்வேருக்கும்,சோபை,கரப்பான்,வெப்பம்,குன்மம்,கீல்வீக்கம்,வாதகோபம், பல நச்சுக்கள் இவை நீங்கும்.

''வீக்கம் கரப்பான் விதாகம் கிரந்தி குன்மம்
ஊக்கம்மிகு சூலைவாய் வோடுபித்த-தாக்குவிடம்
வீர்றுமோ கண்துலங்கும் வீசுபசி ரத்தமுண்டாம்
கூறுசங்கம் வேரிலை கட்கு''

இதன் வேர் பட்டைக்கு கோழை, இருமல், ஐயசுரம், கடுப்பு, ஐய அதைப்பு, கிரந்தி, உட்சுரம், வயிற்றுப்புழுக்கள், ஆகியவை நீங்கும்.

இலை வழக்கு:

இலையின் குடிஒவ்நீர் வளி நோய்கட்கு வழங்கி வரலாம், இலையை அரைத்து அம்மை புண்களுக்கு பூச குணமகும். கரப்பனுக்கும் பூசலாம்.

சங்கன் சேரும் தோல் நோய்க்கான மருந்துகள்:

- சிரங்கு தீர எண்ணெய்:[30]

  தீரும் நோய்கள் : உடலில் பூசி கொள்ள சிரங்கு தீரும்

- கரப்பான் தீர எண்ணெய்:[30]

  தீரும் நோய்கள் : நாள் தோறும் பூசி பயன்படுத்த கரப்பான் தீரும்

பிற மருந்துகள்

- சம்பீர தைலம்: தலை முழுகவும்

- சூலை தீர எண்ணெய்:

  தீரும் நோய்கள் : 18 வகை கரப்பான் தீரும்

- ஆடாதோடை நெய்:

  தீரும் நோய்கள் : இருமல்,சுவாசகாசம்

- இருமல் தீர அடை

  தீரும் நோய்கள் : இருமல்

MINARALOGICAL ASPECT

SULPHUR

SULPHUR:[31]

Sulphur is a chemical elament, with symbol S it is an abundant, multivalent non metal under normal condition, Elimental sulphur is a bright yellow crystalline.

MORPHOLOGY:

Over 50 forms have been noted blochy dipyramidal ones most common. Also tubular and sphenoidal, also found.aspowdery coating,massive materials, and in reniform.

SULPHUR OCCURANCE ;

Sulphur occurs mainly in sulfate form as for example calcium sulfate, The most important sources of sulphur are the mines sulphur found mainly, in the USA and japan in europe the main deposits are in sicily.Natural occurance. Sulphur is widely distributed nature. it is found in many minerals and ores.

Eg ; Iiron pyrites cinnabar, zing blende,Epsom salts ,and in minerals it is found uncombined in some volcanic regions and in large under ground deposits in sicily [32]

PHYSICAL PROPERTIES ;

SYMBOL	:	S
FORMULA	:	S8
SYSTEM	;	Arthorhombic
ATOMIC NUMBER	:	16
COLOUR	:	Elimental sulphur is a bright yellow crystalline solid
MELTING POINT	:	115.2 c
HARDNESS	:	1/2 to21/2
ATOMIC MASS	:	2.065+ 0.005u
DENSITY	:	2.07g/cm3

CHEMICAL PROPERTIES:[33]

ODUR	:	Oderless or faint, rotten egg if not100% pure
MOLICULAR WEIGHT(g)	:	256.50
SOLIBILITY IN WATER	:	Inssoluble
BOILLING POINT	:	832.f
PURITY	:	90% to100%

ACTIONS:[34]

- Antimicrobial activity
- Antifungal activity
- Anti bacterial activity

USES:

Sulphur today in the treatment of skin disorders and irritants such as eczema,psoriasis, and acne because of antiseptic properties and its essential role in the synthesis of collagen,parasitic infestions ,another common medical use of sulphur both today and in the ancient world, to getriding parasitic infestions such as crab lice,scabies.

BOTANICAL ASPECT [35]

Classification:

KINGDOM	:	Plantae
CLADE	:	Angiosperms
CLASS	:	Dicatyledons
SUB CLASS	:	Gamopetalae
SERIES	:	Bicarpellatae
ORDER	:	Brassiceles
FAMILY	:	Salvadoraceae
SPECEIES	:	Azima tetracantha (Lam)

LOCAL NAME:[14]

Bengali	:	Trikantagati
Hindi	:	Katagur
Sanskrit	:	Kundali
Telugu	:	Tella uppi mulsanga
Kanada	:	Billi uppi
Malayalam	:	Changan
Oriya	:	Odibazgo
Tamil	:	Sungam-Chedi

HABITAT :

World	:	Srilanka, Myanmar,
India	:	South india near the coast, Orissa,Sundarbans

PARTS USED:

Leaves, root,and juice obtained from root bark, Straggling,armed, busy shrub,up to 2m tall, branchlets 4 –gpnous, spines4, axillary.

LEAVES:

Leves elliptic,-obavate.

FLOWERS:

Small , unisexual, greenish white, in axillary fascicles.

FRUIT:

Berry, globose, edible

ACTION AND USES:

The leaves are reported to be used for treating ulcers,especially after amall pox, A power ful diuretic given in rheumatism, dropsy, and chronic diarrhea and as astimulant tonic after confinement.

CHEMISTRY:

The leaves and stems yield alcoloides-azimin, a small amount of azcarpine and minute quantities of carpine.

Materials and Methods

Ash Values

The Ash values are a measure of the inorganic constituents present in the raw drug. A high ash content explains its unsuitable nature to be used as a drug

Total Ash

A little of extract was taken in a silica crucible previously ignited, cooled and weighed. It was incinerated by gradually increasing the heat not exceeding dull red heat (450°C) until free from carbon, cooled and weighed. The percentage of ash was calculated with reference to air- dried drug. The procedure was repeated to get the constant weight.

Water soluble ash

The total ash was boiled with 25 ml water and filtered through ash less filter paper (Whatmann 4.1). It was followed by washing with hot water. The filter paper was dried and ignited in the silica crucible, cooled and the water insoluble ash was weighed. The water-soluble ash can be calculated by subtracting the water insoluble ash from the total ash.

Acid insoluble ash

The total ash obtained was boiled for 5 minutes with 25 ml of (10% w/v) dilute hydrochloric acid and filtering through ash less filter paper (Whatmann 4.1). The filter paper was ignited in the silica crucible, cooled and insoluble ash was weighed.

Elemental Analysis using Atomic Absorption Spectrophotometer

AAS of Gandhaga Maathirai was done in Ramachandra university,chennai

The elemental analysis of digested samples have been determined by Atomic Absorption Spectrophotometer (AAS model 400 Perkin Elmer) at the CARISM, SASTRA Deemed University Thanjavur. The elements like Fe, Cu, Mn, Ni, Zn, Co and Pb have been analyzed. In this method the sample, in the form of a homogeneous liquid, is introduced into a flame where thermal and chemical reactions create "free" atoms capable of absorbing, emitting or fluorescing at characteristic wavelengths. Flame spectroscopy can be subdivided into the different processes occurring, to give us Flame Emission, Atomic Absorption Spectroscopy and Atomic Fluorescence Spectroscopy.

In Atomic Absorption Spectrophotometer (AAS) the majority of free atoms in the commonly used flames were in the ground state, but that the flames did not also have enough energy to excite these atoms. A light source emitting a narrow spectral line of the characteristic energy is used to excite the free atoms formed in the flame. The decrease in energy (absorption) is then measured.

The absorption is proportional to the concentration of free atoms in the flame, given by the Lambert-Beer law.

ABSORBANCE = log 10 I0/It = K.C.L.

Where, I0 = Intensity of incident radiation emitted by the light source.

It = Intensity of transmitted radiation

C = Concentration of sample (free atoms)

K = Consent (can be determined experimentally)

L = path length.

Working standard solutions of Fe, Cu, Mn, Ni, Zn, Co and Pb were prepared from stock standard solution of 1000 ppm from MERCK. Using blank solution to zero the instrument performs the Calibration. The standards are then analyzed and their absorbance recorded. A graph of Absorbance Vs Concentration is plotted. The calibration can be performed in the concentration mode in which case the concentration of the sample is read off directly. Calibration of the instrument was repeated periodically

during operation. A blank reading was also taken and necessary correction was made during the calculation of concentration of various elements. In AAS the wave length (nm), Flame type, Atomizer, Measurement mode, Lamp source and calibration range (ppm) of different elements have been used, are listed in table.

BIO -CHEMICAL ANALYSIS OF GANDHAGA MAATHIRAI

The biochemical analysis of the Gandhaga Maathirai was carried out in the Biochemistry lab, NIS

S.No	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of sample	Light green in colour	
2.	**Solubility:** a. A little(500mg) of the sample was shaken well with distilled water. b. A little(500mg) of the sample was shaken well with con. HCl/Con. H_2So_4	Sparingly soluble	Absence of Silicate
3.	**Action of Heat:** A small amount(500mg) of the sample was taken in a dry test tube and heated gartly at first and then strong.	No white fumes evolved	Absence of Carbonate
4.	**Flame Test:** A small amount(500mg) of the sample was made into a paste with con. HCl in a watch glass and introduced into non-luminous part of the Bunsen flame.	No Bluish green flame appeared.	Absence of Copper

5.	**Ash Test:** A filter paper was soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited.	Yellow colour flame appeared.	Presence of sodium

Preparation of Extract:

5gm of Gandhaga Maathirai was weighed accurately and placed in a 250ml clean beaker and added with 50ml of distilled water. Then it was boiled well for about 10 minutes. Then it was cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S.No	EXPERIMENT	OBSERVATION	INFERENCE
	I.Test For Acid Radicals		
1.	**Test For Sulphate:** a. 2ml of the above prepared extract was taken in a test tube to this added 2ml of 4% dil ammonium oxalate solution b. 2ml of the above prepared extracts was added with 2ml of dil-HCl was added until the effervescence ceases off. Then 2ml of dil.Barium chloride solution was added.	Cloudy appearance present	Presence of Sulphate
2.	**Test For Chloride:** 2ml of the above prepared extract was added with dil. HCl till the effervescence	cloudy appearance.	Presence of Chloride

	ceases. Then 2ml of dil.silver nitrate solution was added.		
3.	**Test For Phosphate:** 2ml of the extract was treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3.	No Yellow appearance present	Absence of Phosphate
4 .	**Test For Carbonate:** 2ml of the extract was treated with 2ml dil. Magnesium sulphate solution	No Cloudy appearance.	Absence of carbonate
5.	**Test For Nitrate:** 1gm of the substance was heated with copper turning and concentrated H2So4 and viewed the test tube vertically down.	No Brown gas evolved.	Absence of Nitrate
6.	**Test For Sulphide:** 1gm of the substance was treated with 2ml of con. HCL	No Rotten Egg Smelling gas.	Absence of Sulphide
7.	**Test For Fluoride & Oxalate:** 2ml of extract was added with 2ml of dil. Acetic acid and 2ml dil.calcium chloride solution and heated.	No Cloudy appearance	Absence of fluoride and oxalate
8.	**Test For Nitrite:** 3drops of the extract was placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil.Benzidine solution was placed.	No Characteristic changes	Absence of Nitrite

9.	**Test For Borate:** 2 Pinches(50mg) of the substance was made into paste by using dil.sulphuric acid and alcohol (95%) and introduced into the blue flame.	No Bluish green colour flame.	Absence of borate
	II. Test For Basic Radicals		
1.	**Test For Lead:** 2ml of the extract was added with 2ml of dil.potassium iodine solution.	No yellow Precipitate obtained.	Absence of Lead
2.	**Test For Copper:** a. One pinch(50mg) of substance was made into paste with con. HClin a watch glass and introduced into the non-luminuous part of the flame.	No Blue colour flame No Blue colour precipitate formed.	Absence of copper
3.	**Test For Aluminium:** To the 2ml of extract, dil.sodium hydroxide was added in 5 drops to excess.	Yellow colour appeared.	presence of aluminium
4.	**Test For Iron:** a. To the 2ml of extract,2ml of dil.ammonium solution was added. b. To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNo3 was added	blood red colour appeared.	presence of Iron

5.	**Test For Zinc:** To 2ml of the extract, dil.sodium hydroxide solution was added in 5 drops to excess and dil.ammonium chloride was added.	White precipitate was formed	presence of Zinc
6.	**Test For Calcium:** 2ml of the extract was added with 2ml of 4% dil.ammonium oxalate solution	Cloudy appearance and white precipitate was obtained	Presence of calcium
7.	**Test For Magnesium:** To 2ml of extract dil.sodium hydroxide solution was added in drops to excess.	White precipitate was obtained	Presence of Magnesium
8.	**Test For Ammonium:** To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.	No Brown colour appeared	Absence of ammonium

9.	**Test For Potassium:** A pinch(25mg) of substance was treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.	Yellowish precipitate was obtained.	presence of Potassium
10.	**Test For Sodium**: 2 pinches(50mg) of the substance was made into paste by using HCl and introduced into the blue flame of Bunsen burner.	yellow colour flame appeared	Presence of sodium

11.	**Test For Mercury**: 2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.	No yellow precipitate was obtained	Absence of mercury
12.	**Test For Arsenic:** 2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.	No brownwish red precipitate was obtained	Absence of arsenic
	III. Miscellaneous		
1.	**Test For Starch:** 2ml of extract was treated with weak dil.iodine solution	No blue colour developed	absence of starch
2.	**Test For Reducing Sugar:** 5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour not developed	Absence of reducing sugar
3.	**Test For The Alkaloids:** a) 2ml of the extract was treated with 2ml of dil.potassium iodide solution. b) 2ml of the extract was treated with 2ml of dil.picric acid. c) 2ml of the extract was treated with 2ml of dil.phosphotungstic acid.	Yellow colour developed	Presence of Alkaloid
4.	**Test For Tannic Acid:**	Black precipitate	abesence

	2ml of extract was treated with 2ml of dil.ferric chloride solution	was obtained	of Tannic acid
5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of dil.Potassium permanganate solution was added.	Potassium permanganate was not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid:** 2 drops of the extract was placed on a filter paper and dried well. 20ml of Biurette reagent was added.	No violet colour developed	absence of amino acids
7.	**Test For Type Of Compound:** 2ml of the extract was treated with 2 ml of dil.ferric chloride solution.	No green colour developed No red colour developed No violet colour developed No blue colour developed	Absence of oxy quinole pinephrine and pyro catechol Anti pyrine, Aliphatic amino acids and meconic acid are absent Apomorphine salicylate and Resorcinol are absent Morphine, Phenol cresol and hydro uinone are absent

ACUTE AND SUB ACUTE TOXICITY STUDY ON GANDHAGA MAATHIRAI

Animals

Mice of either sex weighing 25-30g and rats weighing 210-240g were obtained from the animal house of Vels University. The animals were used with the approval of the Institute animal ethics committee and obtained from Vels University, Chennai. They were fed with a balanced standard pellet diet and maintained under standard laboratory conditions, providing 24-28^{0}C temperature, standard light cycle (12 h light, 12 h dark) and water ad libitum. Animals were kept in cages with raised floors of wide mesh to prevent coprophagy. Animal welfare guidelines were observed during the maintenance period and experimentation. The rats were randomly assigned to control and different treatment groups, six animals per group. The animals were acclimatized for one week under laboratory conditions.

ACUTE TOXICITY STUDY-OECD 425 GUIDELINES

Acute oral toxicity test for the Gandhaga Maathirai was carried out as per OECD Guidelines 425. As with other sequential test designs, care was taken to ensure that animals are available in the appropriate size and age range for the entire study. The test substance was administered in a single dose by gavage using a stomach tube or a suitable intubation cannula. The fasted body weight of each animal is determined and the dose is calculated according to the body weight.

After the substance has been administered, food was withheld for a further 2 hours in mice. The animals were observed continuously for the first 4 h and then each hour for the next 24 h and at 6 hourly intervals for the following 48 h after administering of the test drug, to observe any death or changes in general behaviour and other physiological activities. Single animals are dosed in sequence usually at 48 h intervals. However, the time interval between dosing is determined by the onset, duration, and severity of toxic signs. Treatment of an animal at the next dose was delayed until one is confident of survival of the previously dosed animal.

Observation of toxicity signs*:*

General behavior, respiratory pattern, cardiovascular signs, motor activities, reflexes, change in skin and fur, mortality and the body weight changes were monitored daily. The time of onset, intensity, and duration of these signs, if any, was recorded.

SUB-ACUTE TOXICITY

In a 28-days sub acute toxicity study, twenty four either sex (3+3) rats were divided into four groups of 6 rats each. Group I that served as normal control was administered with distilled water (p.o.) while groups II, III and IV were administered daily with the Gandhaga Maathirai (p.o.) for 28 days at a dose of 1.0, 2.0 and 4.0 g/kg respectively. The animals were then observed daily for gross behavioural changes and any other signs of subacute toxicity.

The weight of each rat was recorded on day 0 and weekly throughout the course of the study, food and water consumption per rat was calculated. At the end of the 28 days they were fasted overnight, each animal was anaesthetized with diethylether, following which they were then dissected and blood samples were obtained by cardiac puncture into heparinised tubes. The blood sample collected from each rat was centrifuged with 3000 X g at $4^{o}C$ for 10 min to separate the serum and used for the biochemical assays.

Hematological and blood biochemical analyses*:*

At the end of the study, all animals were kept fasted for 16-18 h and then anesthetized with anesthetic ether on the 28th day. Blood samples for hematological and blood chemical analyses were taken from retro orbital vein. Heparinized blood samples were taken for determining complete blood count (white blood cell count, differential white blood cell count, platelet count, red blood cell count, hematocrit, and hemoglobin) by semiautomated hematology analyzer. The serum from non-heparinized blood was carefully collected for blood chemistry and enzyme analysis glucose, creatinine, total protein, albumin, total and direct bilirubins, serum glutamate-oxaloacetate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT), and alkaline phosphatase (ALP)) were automatically determined using autoanalyzer.

Necropsy:

All rats were sacrificed after the blood collection. The positions, shapes, sizes and colors of internal organs were evaluated. The Spleen, Testes, Pancrea, Lung, Liver, Brain, Heart, Stomach, Intestine, Bone, Ovary, and Kidney tissues were excised from all rats to visually detect gross lesions, and weighed to determine relative organs' weights and preserved in 10% neutral formalin for histopathological assessment. The tissues were embedded in paraffin, and then sectioned, stained with haematoxylin and eosin and were examined microscopically.

Statistical analysis

Values were represented as mean ± SEM. Data were analysed using one-way analysis of variance (ANOVA) and group means were compared using the Tukey-Kramer Multiple Comparison Test using GraphPad Instat-V3 software. P values < 0.05 were considered significant.

RESULTS AND DISCUSSION

All the animals from control and all the treated dose groups up to 100 mg/kg not survived throughout the dosing period of 28 days. Signs of minor or significant intoxication were observed in animals from lower to higher dose groups during the dosing period of 28 days. Animals from all the treated dose groups exhibited comparable body weight gain with that of controls throughout the dosing period of 28 days. Food consumption of control and treated animals was found to be comparable throughout the dosing period of 28days. Ophthalmoscopic examination, conducted prior to and at the end of dosing period on animals from control and all the treated dose groups revealed abnormality.

Haematological analysis conducted at the end of the dosing period on day 28, revealed no significant abnormalities attributable to the treatment. Biochemical analysis conducted at the end of the dosing period revealed no remarkable abnormalities attributable to the treatment. Functional observation tests conducted at termination revealed no abnormalities. Urine analysis, conducted at the end of the dosing period in week 4 revealed no abnormality attributable to the treatment. Organ weight data of animals sacrificed at the end of the dosing period was found to be comparable with that of

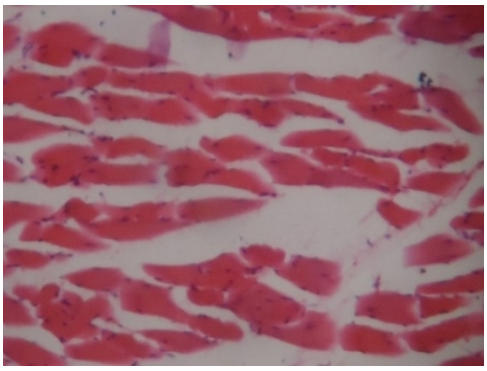
respective controls. Gross pathological examination did not reveal any abnormality. Histopathological examination revealed few abnormality. The results of haematological investigations conducted revealed no significant changes in the values of different parameters investigated when compared with those of respective controls.

CONCLUSION

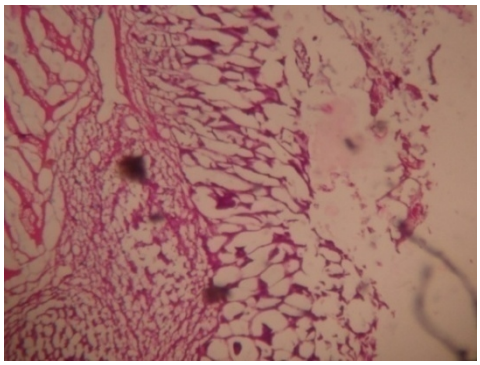
Over all findings of toxicity profile showed, mild toxic effect was observed upto100mg/kg of Gandhaga Maathirai via oral route over a period of 28 days. So, it can be concluded that the Gandhaga Maathirai can be prescribed for therapeutic use in human with the dosage recommendations of upto 25mg/kg. body weight p.o

HISTOPATHOLOGY SLIDES:

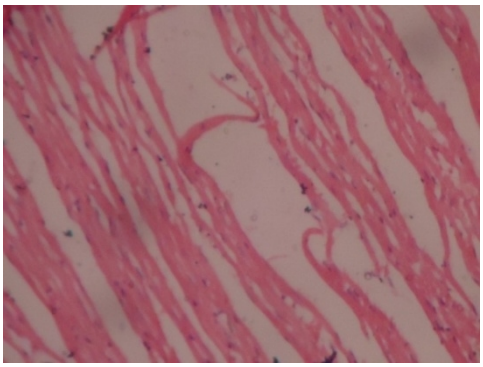
BONE



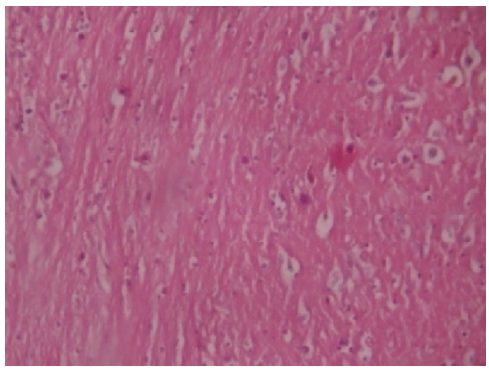
INTESTINE



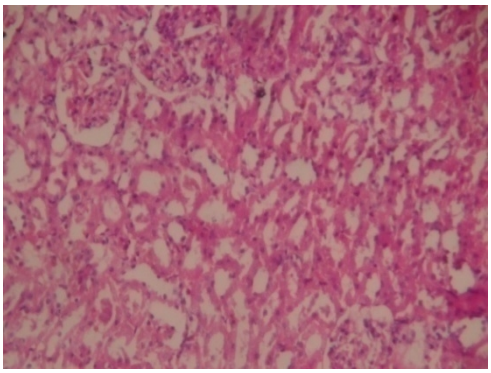
HEART



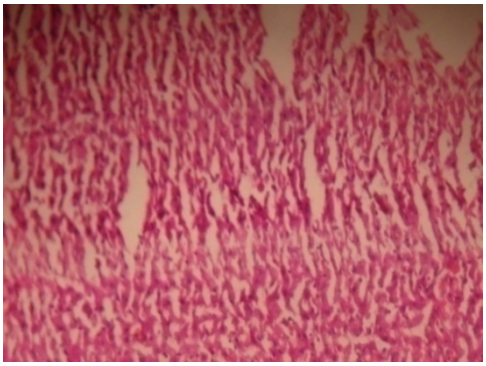
BRAIN



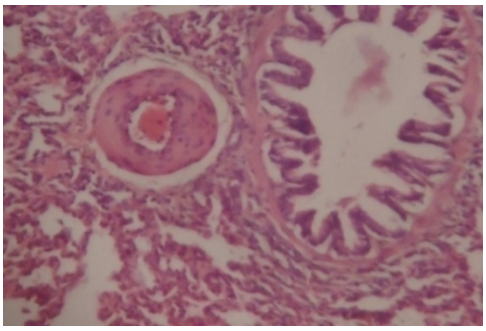
KIDNEY



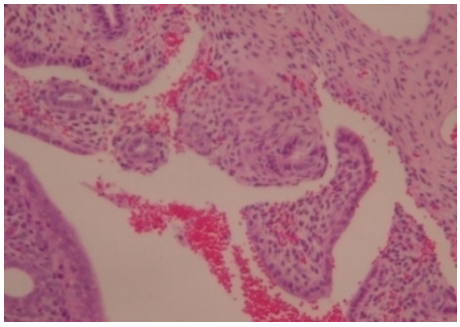
LIVER



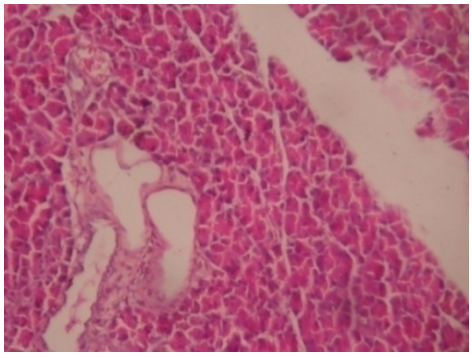
LUNG



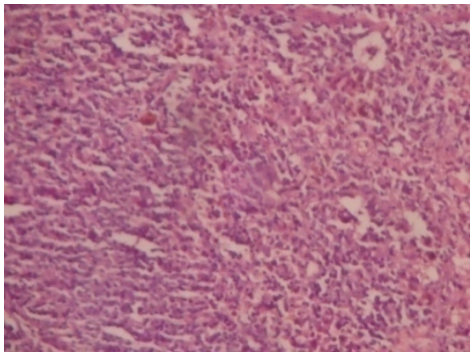
OVARY



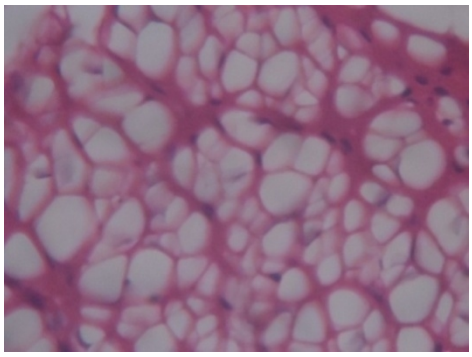
PANCREAS



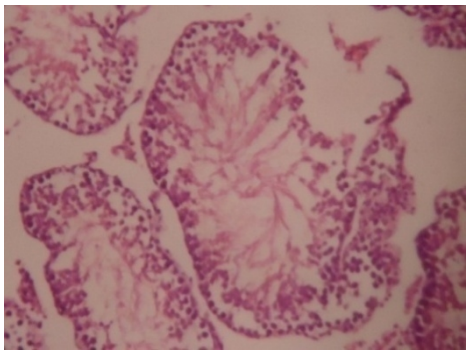
SPLEEN



STOMACH



TESTIS



EVALUATION OF ANTIHISTAMINIC ACTIVITY OF GANDHAGA MAATHIRAI

INTRODUCTION

Histamine plays an important role in the symptomatology of allergic reactions. Drugs which have the capacity to control the histamine release and its further effects can be called as antihistaminic or antiallergic drugs. Siddha is a traditional Indian Medicinal System practiced for thousands of years. traditional medicines are being used by nearly about 60-80% of the world population, primarily in developing countries for primary health care. Selection of scientific and systematic approach for the systematic biological evaluation of Siddha formulations based on their use in the traditional systems of medicine forms the basis for an ideal approach in the development of new drugs.

Siddha medicines are being increasingly utilized to treat a wide variety of diseases, though the knowledge about their mode of action is relatively scanty. Allergies occur when a hypersensitive immune system reacts to a common or unusual substance. The number of individuals suffering with allergic illnesses is increasing in the industrialized, as well as in large cities of developing countries. Allergies also have reached high prevalence and incidence in all over the world. Most of the allergic diseases are due to allergens like airborne pollens (grass, trees, and weeds), house-dust, mites, animal dander, cockroaches, fungal spores, etc. Overproduction of histamine in body triggers the allergic and inflammatory responses. Hence to identify a better antihistaminic drug, the present study was undertaken to scientifically evaluate and prove the traditional claim of the antihistaminic potency of Gandhaga mathirai.

The experimental protocol used in this study was approved by IAEC. (XIII/VELS/PCOL/31/2000/CPCSEA/IAEC/08.08.2012).

MATERIALS AND METHODS

Drugs and Stock Solution

Drugs used were Histamine Hcl (Sigma Chemical, USA) Histamine hydrochloride was dissolved in distilled water and desired concentrations were prepared. The test drug Gandhaga Mathirai concentration was 100microgram per ml prepared by suspending with 2% CMC and then the volume was adjusted to 10 ml with normal saline for making the concentration of 100µg/ml in distilled water.

Animals and In-vitro antihistaminic study

Guinea pig was sacrificed and a segment from ileum (2cm) was dissected from the terminal ileum and mounted in an organ bath containing Tyrode solution (10ml) between two stainless steel hooks under 0.5 to 1 g initial tension. The lower hook was fixed at the bottom of the organ bath and upper one was connected to an isotonic transducer. The Tyrode solution composition (pH 7.4) was (concentration in gm/lit.) NaCl 8.0, KCl 0.2, $CaCl_2$ 0.2, $MgCl_2$ 0.1, $NaHCO_3$ 1.0, NaH_2PO_4 0.05, and Glucose1.0gm/liter. It was continuously aerated and maintained at 37 ± 0.5ºC The equilibrium period was 60 min and the bath solution was refreshed every 15min. After equilibrium period, a dose response curve for histamine in variant molar concentrations, by maintaining 45min time cycle.

Statistical Analysis

Ileum contractions induced by agonist were assumed as 100% and reductions induced by test drug calculated. Percentage of ileum contraction was expressed as mean ± SEM. Results were analyzed using one-way analysis of variance (ANOVA). Probability value less than 0.05 were considered as significant

RESULTS AND DISCUSSION

In isolated guinea pig ileum preparation, a right side shift of dose response curve of histamine was observed in the presence of the Gandhga Maathirai indicating antihistaminic action. It was observed that antihistaminic activity in Gandhga Maathirai was effective. The resultant antihistaminic effect may be caused by the suppression of antibody production and stabilization of the mast cell membrane, inhibition of antigen-induced histamine release or non-availability of antibodies on the mast cell surface.

CONCLUSION

Histamine produces dose dependent contraction of Guinea pig ileum preparation. In the present study, Thus, it can be concluded from the results obtained the Gandhga Maathirai significantly inhibited ($p<0.01$) the histamine-induced contraction of isolated Guinea pig tracheal chain preparation and found to be effective can be used as a antihistaminic agent clinically for mild to moderate allergic symptoms.

DISEASE ASPECT

SIDDHA ASPECT

காணாக்கடி[36]

கை,கால் உடம்பின் வேறு பகுதிகளில் தினவு எடுத்து சொறிந்தால் அங்கு திட்டுத்திட்டாக தடிப்புண்டாதல்,தினவு மிக அதிகரித்தல் ஆகிய குறிகுணங்கள் காணப்படும்.இது ஒவ்வாமை அல்லது நோய்த்தடிப்புகள் என்ப்படும். ஒவ்வாத தன்மையுள்ள பொருட்களை உண்ணுதல், ஒவ்வாத தன்மையுள்ள செயல்களை செய்தல் மருந்துகளினால் ஒவ்வாமை ஆகியவற்றால் உண்டாகிறது. மேலும் சில தடிப்புகள் உடலின் தீய ஏமச்சத்துகளினால் உண்டாகிறது.

குறிகுணங்கள்:

அரிப்பு, தடிப்பு உடம்பின் தோல் மீது பட்டை பட்டையாக சிவந்த நிறத்தில் வடுக்கள் உண்டாதல். இரவில் தடிப்புகள் உண்டாதல்.**சில வகை தடிப்புகள் ஏற்படுவதன் காரணம் சரியாகத் தெரியவில்லை. எனவே இதை ஒவ்வாமை எனவும் சொல்வர். காணாக்கடி என்றும் சொல்லப்படும். மருந்துகள் ஒவ்வாமையாலும் தோலில் தடிப்புகள் ஏற்படலாம் இதற்குஅம்மருந்துகளை நிறுத்திவிட்டு அவைகளுக்கு முரிவு செய்யத் தடிப்புகள் மாறும் இந்நோயில் மலத்தைக் கழித்து, சிறுநீரைப் பெருக்கும் மருந்துகளும், வழங்கலாம்.**

முக்குற்ற மாறுபாடு:

"வாதமலாது மேனி கெடாது"

-தேரன்.

வாத நாடியின் பாதிப்பினால் இந்நோய் உண்டாகிறது.

MODERN ASPECT

DEFINITION:[39]

Urticaria is characterized by transient, superficial cutaneous swellings(wheals or Hives) caused by transudation of plasma from the dermal capillaries,It is not a singal disease but a reaction pattern that represents cutaneous mast cell de granulation.

Prevalence:[37]

Approximately 15 to 20% of the general population will have urticaria at least once During their life time.

World allergy organization (WAO) urticaria is a frequent disease.the life time Prevalence for any sub type of urticaria is approximately 20%.[38]

Causes of urticaria:[39]

Foods, Nuts ,Legumes, Milk , Soy, wheat

Food allergies: (shell fish, eggs, mushrooms, prawn)

Emotional stress

Aero allergen

Dust mites

Pollens

Animal dander

Infection:

Viral, Parasitic, Fungal or bacterial

PHYSICAL STIMULI:

Exposure to sun, Water or temperature externs

CLINICAL FEATURES:

Urticaria is due to localized capillary vaso dilation, followed by Extravasation of protein rich fluid in to the surrounding tissue , It is characterized by the Appearance of a tr transient migratory pruritic, rash with raised,round or oval patches that Blanch on

pressure, wheals, Lesion often have a pale centre and are surrounded by an area of Erythema.

AGE:

Acute urticaria is more common in children and young adults, Chronic urticaria is More common in adults.

GENDER:

Over all the male,female ratio for chronic urticaria is 1;2,women singinificantly Out number men in dermographism and cold urticaria.

CLASSIFICATION:

- ACUTE URTICARIA:

  Acute urticaria is usually defined as urticaria lasting less than 6 weeks,

- CHRONIC URTICARIA:

  Chronic urticaria is usually as urticaria, lasting more than 6 weeks

- PHYSICAL URTICARIA:

  Physical urticarias are characterized by the predominant physical stimulus that elicits them,they may overlap.

- COLD URTICARIA:

  More common in children and young adults, wheals occur in areas

- SOLAR URTICARIA:

  Exposure to the sun results in the rapid on set of urticaria usually

- AQUAGENICURTICARIA:

  This occurs in contact with water

- DERMATOGRAPHIA:

  This is the most commom physical, urticaria.it may be elicited by firmly stroking the skin.

- CHOLENERGIC URTICARIA:

  Wheals (tipically,small,popular) occur when the individual becomes hot.

- NONIMMUNOLOGICAL (CONTACT) URTICARIA:

  Animals, Plants, Therapeutic agents

AETILOGICAL FACTORS:

Infection, certain infection have been implicated in the etiology of urticaria,including dental and sinus infection,HBV,helicobacter pylori infection,and herpes simplex virus and parasitic infection

- AUTOIMMUNE DISEASES:

Urticaria has been associated with a number of autoimmune diseases, including SLE,juvenile rheumatoid arthritis

- MALIGNANT DISEASES:

Urticaria has been associated with malignant condition

- CHRONIC IDIOPATHIC URTICARIA (CIU):

No cause is established for their urticaria are said to have CIU.

- INVESTIGATION:

  Complete blood count with differential count

  Erythrocyte sedimentation rate

  Stool analysis for ova and parasites

  Specific IgE test

CLINICAL STUDY

The study was conducted on patients with Kaanakadi (Urticaria) patients satisfying the inclusion criteria.

The study was conducted at the OPD/IPD of Ayothidoss Pandithar Hospital of the National Institute of Siddha, Tambaram sanatorium, Chennai-47.

Sample size:

The trial size was 20 patients.

Inclusion criteria:

Age : 20-60 years

Sex : both sex male and female

Symptoms:

Itching

Whealing

Rashes

Scratch marks

Erythema

The patients with any four of the above symptoms with increased IgE level willing to attend the OPD on every 7th day were admitted to the trial.

Exclusion criteria:

Diabetes mellitus

Uraemia

Biliary diseases

Oozing and ulceration

Any other serious illness

Withdrawal criteria:

Development of any adverse reaction

Occurance of any other serious illness

Non-co operation of the patient

TRIAL DRUG AND DURATION

Drug **:** Gandhaga Maathirai -130mgbd with palm gaggery, after food.

Duration of the treatment **:** 40 days.

Conduct of the study:

Kaanakadi patients satisfying inclusion and exclusion criteria were admitted to the trial. Informed consent was obtained from the patients. Routine investigations like Blood test, urine test, and IgE were carried out before and after the trial treatment. For in patients the drug was administered daily. For out patients the trial drug was issued for seven days course.

They were advised to visit the OPD once in 7 days. At each visit they were clinically assessed.

Clinical observation:

For the clinical study of "Gandhaga Maathirai'' on Kaanakadi". 20 patients were selected.

Among 20 patients, 12 (60%) were in female, 8 (40%) were in male.

According to age wise distribution 10% were in 20-30 years,45 % were in 31-40 years and 45% were in 41-60 years.

Among 20 patients, All patients were affected from Itching , 19 patients were affected from whealing, 16 patients were affected from Rashes, 15 patients were affected from scratch marks, and 6 patients were suffering from Erythema.

From the clinical study 85% of patients relieved from Iitching, 78.95% of patients relieved from wheals, 75% of patients relieved from Rashes, 73.33% of patients relieved Scratch marks, 62.5% of patients relieved from Erythema and no adverse effects were observed During trial period**.**

16 (80%) patients had a significant reduction in the IgE levels after the treatment.

DISCUSSION

The drug Gandhaga Maathirai was selected to find out the H_1-histamine antagonistic activity in The Management of Kaanakadi (Urticaria).

The literary evidence from the text Anuboha Vaithiya Navaneetham part 6 strongly supports the H_1-histamine antagonistic activity of the drug.

Biochemical analysis:

The Biochemical analysis of the drug reveals the presence of **sulphate sodium, chloride, alluminium, iron, zinc, calcium, magnesium, potassium and alkaloids.**

Sulphur:[40]

Phosphoadenosine phosphosulphate (PAPS) is the active sulphate utilized for several reactions, Especially in the detoxification mechanism.It is needed for the detoxification mechanism ie production of indoxyl sulphate.

Zinc:[41]

Iit helps repaire damaged tissues and heals wounds, zinc may help nip zits in the buds by reduceing the amount of natural oil,or sebum,produced in the skin .

Magnesium, calcium:[43]

Magnesium can be used as an substitution treatment in Urticaria.calcium also regulates normal skin colour by stimulating melonocytes,the cells that produce pigment.

Iron:[42]

It is required for the formation of. Haemoglobin and myoglobin are required for the transport of oxygen and carbondioxide. It is associated with the immuno competence of the body.

Toxicological studies:

Acute oral toxicity study:

Based on these findings, no toxic effect was observed up to 1000mg/kg of Gandhaga Maathirai treated via oral route over a period of 28 days, at the dose of 1000mg/kg/po did not exhibit any mortality in rats. As per OECD 425 guidelines.

Pharmacological studies:

In the pharmacological studies the drug Gandhaga maathirai exhibits significant anti-histaminic activity against low and higher doses of histamine.

Clinical observation:

From the clinical study 85% of patients relieved from itching, 78.95of patients relieved from wheals, 75% of patients relieved from Rashes, 73.33% of patients relieved from scratch marks 62.5% of patients relieved from erythema and no adverse effects were observed during trial period**.**

16 (80%) patients had a significant reduction in the IgE levels after the treatment.

Bio-statistics:

Statistically, the paired 't' test shows statistical significance for the symptoms before and after the treatment. ($p<0.0001$).

SIDDHA ASPECT

இம்மருந்தில், கந்தகம் மற்றும் சங்கன் இலைச்சாறு சேருகின்றது.

கந்தகம்:

சுவை -கைப்பு,

துவர்ப்பு

சங்கன் : சுவை -கைப்பு,

கைப்பு சுவையின் தன்மை: கைப்பு நச்சுக்களை நீக்குவதில் சிறப்புடையது

"குடற்புழு குட்டம் கொடிய நஞ்சு

வாய்நீருறல் அழற்சியும் தணிக்கும்."

என்பதால் இது தோல் நோய்களைப் போக்கும் தன்மையுள்ளது. துவர்ப்பு சுவை குருதியை தூய்மை செய்யும்என்பதால், இதை தோல் நோயாகிய **காணாகடிக்கு** வழங்கலாம்.

Hence, Ganthaga Maathirai is a better drug of choice in the management of Kaanakadi.

SUMMARY

The literary evidence strongly support the H_1-histamine antagonistic activity of Gandhaga Maathirai.

The drug Gandhaga Maathirai has been selected for this study to evaluate its efficacy on the H_1-histamine antagonistic activity in the management of Kaanakadi (Urticaria).Biochemical analysis of the drug gandhaga maathirai reveals the presence of **sulphate sodium ,chloride, alluminium, iron, zinc, calcium and magnesium, pottasium, alkaloides,**

In the toxicological studies, the drug does not exhibit any mortality upto the dose of 1000mg/kg/po.

In the pharmacological studies the drug Gandhaga Maathirai exihibits significant anti-histaminic activity against low and higher doses of histamine.

From the clinical study 85% of patients relieved from itching, 78.95% of patients relieved from wheals, 75% of patients relieved from rashes, 73.33% of patients relieved from scratch marks, 62.5% of patients relieved from Erythema and no adverse effects were observed during Trial period**.**

16 (80%) patients had a significant reduction in the IgE levels after the treatment.

From the statistical analysis-paired‘t’ test, the drug Gandhaga Maathirai is statistically Significant.

Statistically, the paired ‘t’ test shows statistical significance for symptoms before and After the treatment.($p<0.0001$)

The drug GandhagaMaathirai has

- Anti-histamine (H_1-receptor antagonism) Activity.
- No side effects
- No undoing effects
- Encouraging clinical results.

From the clinical and statistical analysis it is proved that the drug Gandhaga Maathirai is Satistically Significant on H_1 histamine antagonist activity in the management of Urticaria.

CONCLUSION

From the literary evidences, phytochemical review and bio chemical, toxicological and pharmacological studies, it is concluded that drug Gandhaga Maathiri has significant H_1-Histamine Antagonistic activity. Thus it gives a new hope in the management of Kaanakadi (Urticaria).

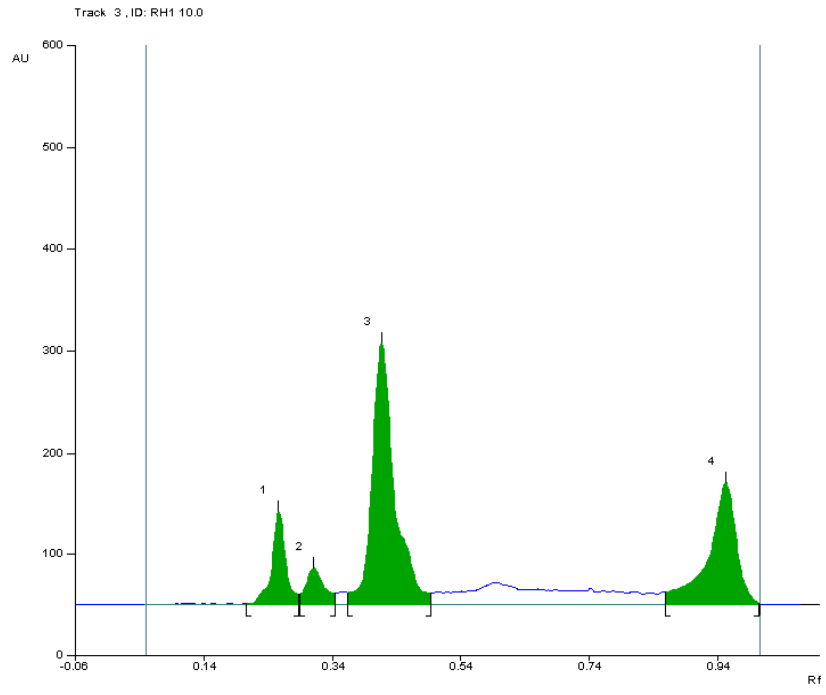
TABLES FOR TRAIL DRUG-1 PAVATTAIVER KUDINEER CHOORNAM

QUALITATIVE ANALYSIS:

.S.NO	PARAMETERS	RESULTS
1.	Phosphate	present
2.	Sulphate	abesent
3.	Redusing sugar	present
4.	Iron	Present
5	Aluminium	Present
6.	Starch	present
7.	ammonia	Present
8.	sodium	Present
9.	alkaloids	Present
10.	Reducing sugars	present

PHYSICAL PROPERTIES

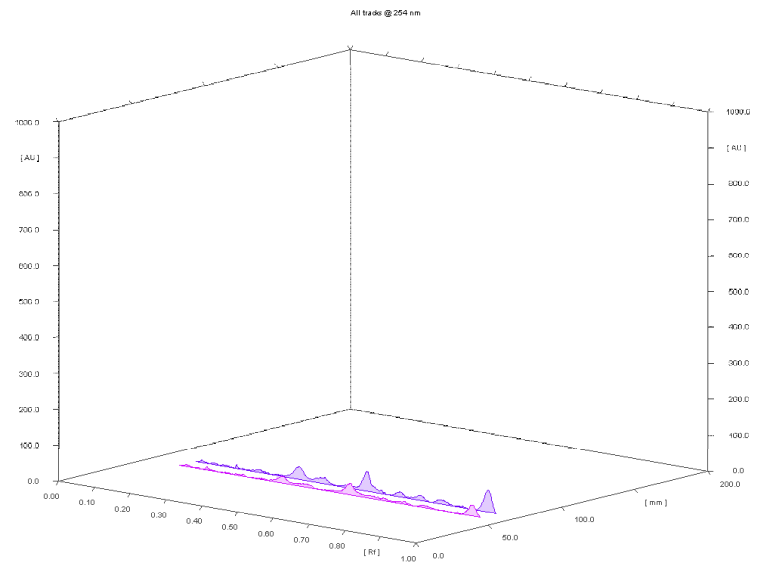
S.No	Characteristic test	Results
1.	pH	4.6
2.	Ash value	0.97
3.	Water soluble ash	0.01



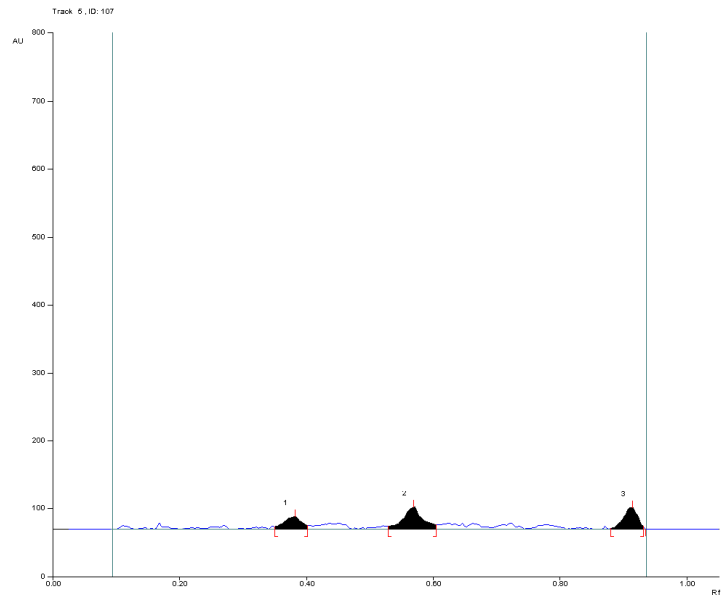
Fingerprint chromatogram of RH -1 at 404nm

107 – Finger Printing

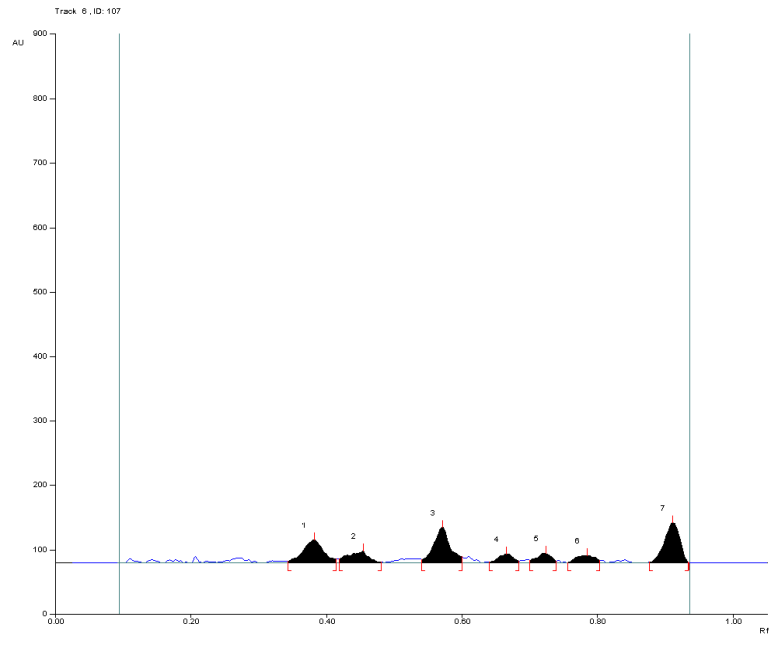
254nm



254nm at 3D Display (*No: 107 -01*)

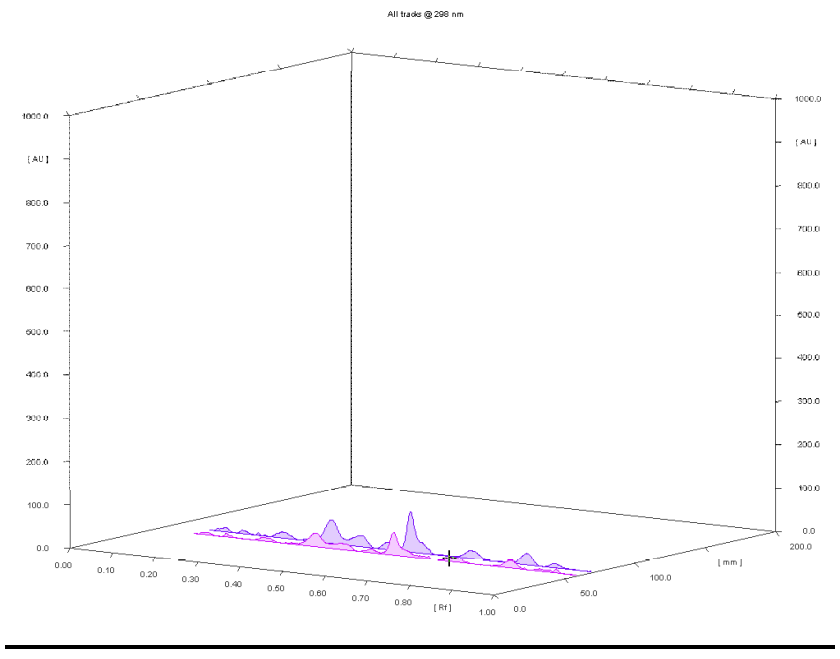


5µl at 254nm (*No: 107 -02*)

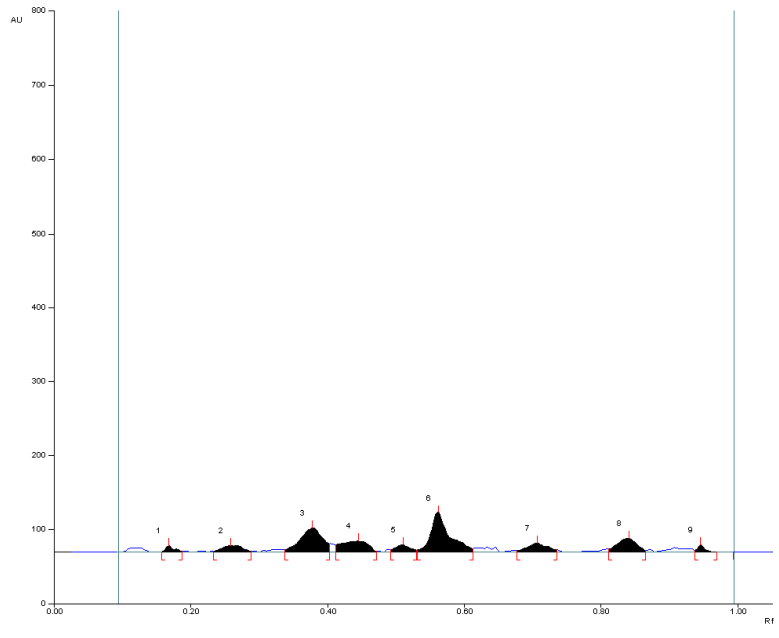


10 µl at 254nm (*No: 107 -03*)

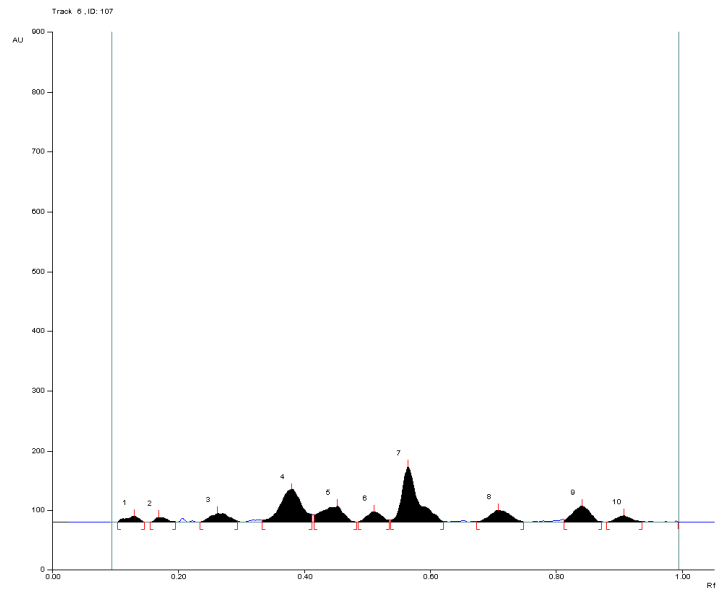
298nm



298 nm at 3D Display (*No: 107 -04*)

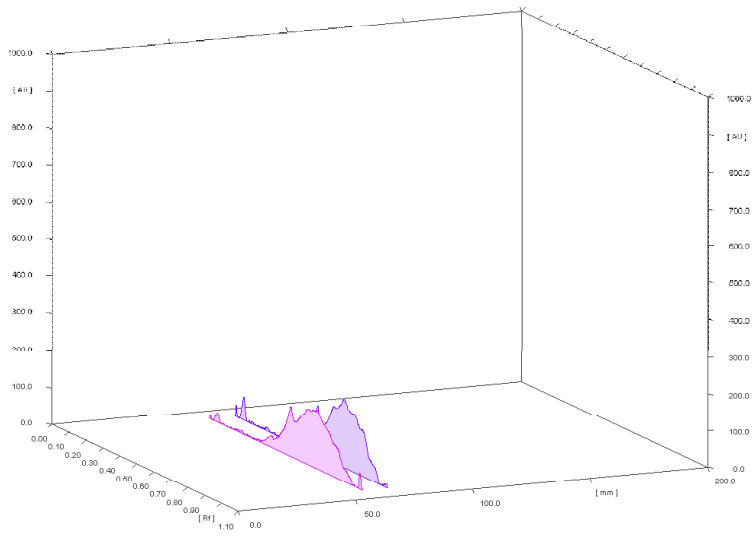


5µl at 298nm (*No: 107 -05*)

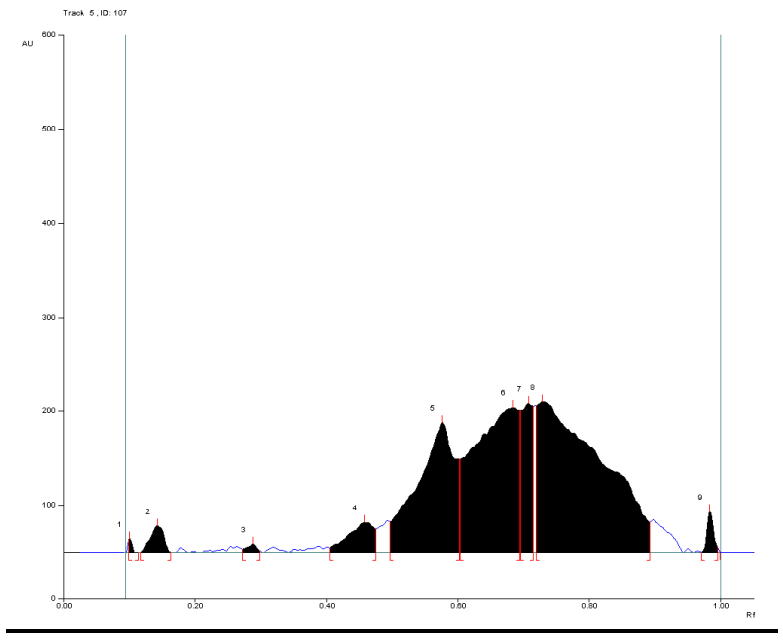


10µl at 298nm (*No: 107 -06*)

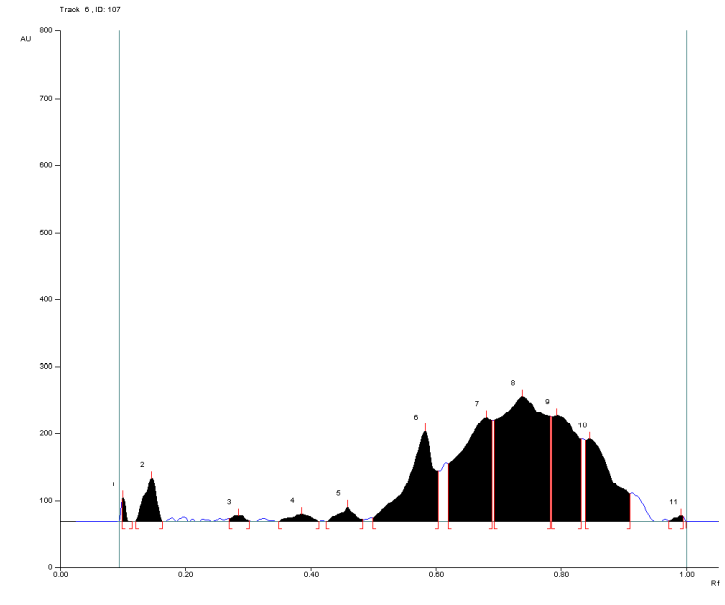
Derivatisation (298nm)



298 nm at 3D Display_ (No: *107 -07*)

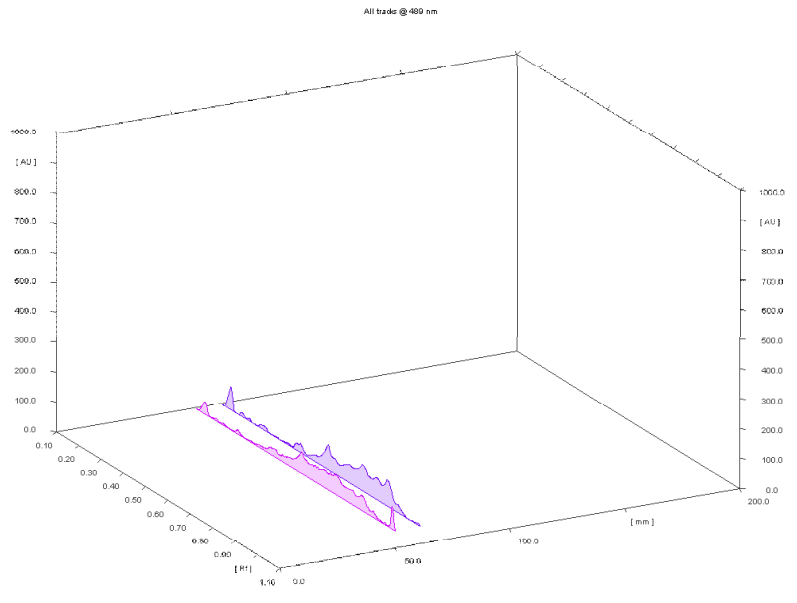


Derivatisation 5µl at 298nm (*No: 107 -08***)**

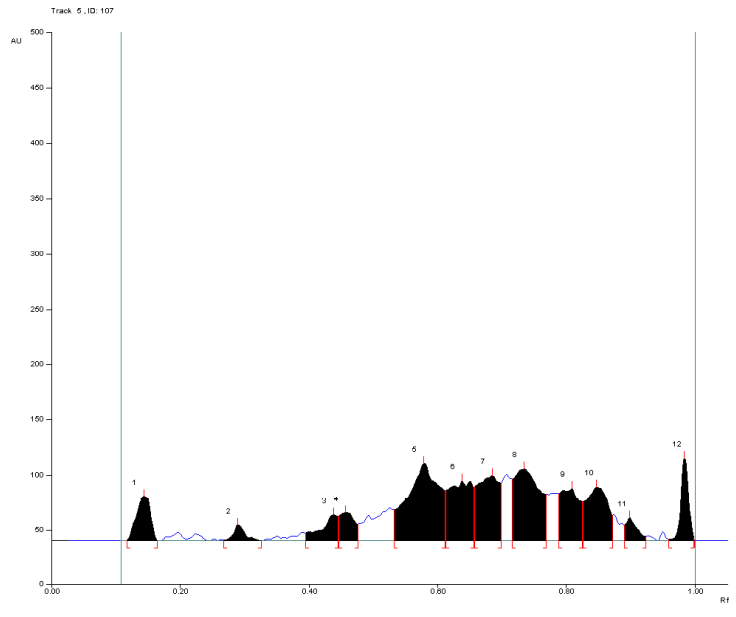


Derivatisation 10µl at 298nm (*No: 107 -09***)**

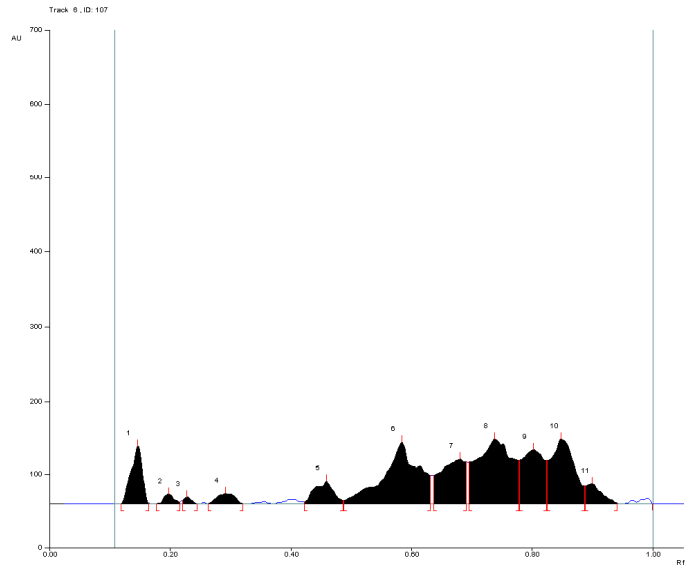
Derivatisation (489nm)



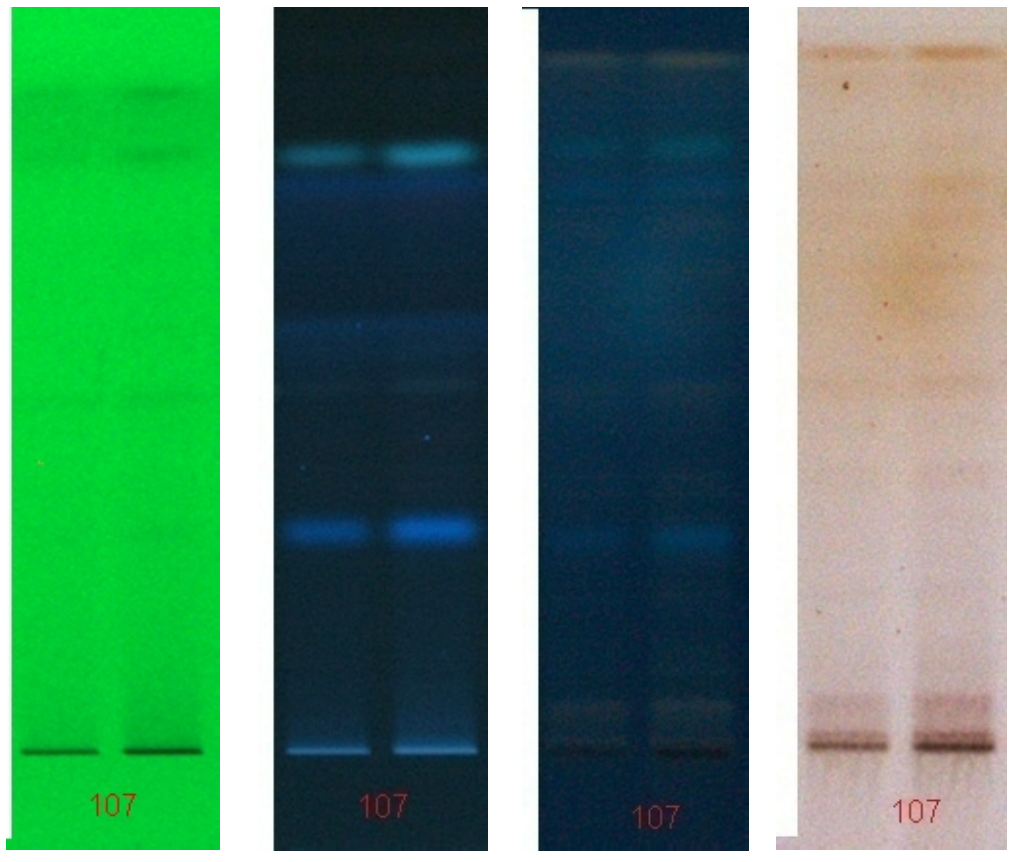
489 nm at 3D Display (*No: 107 -10)*



Derivatisation 5µl at 489nm (*No: 107 -11*)



Derivatisation 10µl at 489nm (*No: 107 -12*)



254nm(*No: 107 -13*) 366nm(*No: 107 -14*) 366nm(*No: 107 -15*) White light(*No: 107 -16*)

Table 1: Dose finding experiment and its behavioral Signs of Toxicity

No	Dose mg/kg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	1000	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	2000	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	5000	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1. Alertness 2. Aggressiveness 3. Pile erection 4. Grooming 5. Gripping 6. Touch Response 7. Decreased Motor Activity 8. Tremors 9. Convulsions 10. Muscle Spasm 11. Catatonia 12. Muscle relaxant 13. Hypnosis 14. Analgesia 15.Lacrimation 16. Exophthalmos 17. Diarrhoea 18. Writhing 19. Respiration 20. Mortality

Table 2. Body wt (g) of rats exposed to Pavattai ver kudineer chooranam for 28days.

Dose (mg/kg/day)	Days				
	1	7	14	21	28
Control	154.12±1.00	155.25±1.45	157.02±2.8	161.18±2.4	164.26±2.8
100	151.14±2.88	152.4±1.33	152.44±2.24	154.20±2.1	156.2±3.2
250	154.12±2.60	153.17±1.01	155.15±1.24	156.22±2.00	158.14±2.8
500	150.10±5.21	156.45±5.00	156.75±4.22	158.18±7.2	161.32±4.00

Values are mean ± S.E.M. (Dunnet 't' test). $^{ns}P>0.05$; Vs Control N=6.

Table 3. Food (g/day) intake of rats exposed to Pavattai ver kudineer chooranam for 8days.

Dose (mg/kg/day)	Days (gms/rats)				
	1	7	14	21	28
Control	44.15±2.65	40.18±2.16	44.21±2.62	45.00±2.18	44.12±2.10
100	42.33±2.44	45.10±2.12	48.54±2.71	45.12±2.45	45.15±2.47
250	44.25±2.41	45.00±2.14	45.69±2.25	44.88±2.28	46.20±2.15
500	46.10±2.29	48.45±2.20*	48.64±2.74	49.40±2.46	47.54±2.41

Values are mean ± S.E.M. (Dunnet 't' test). *P<0.05 Vs Control N=6.

Table 4. Water (ml/day) intake of rats exposed to Pavattai ver kudineer chooranam for 28days.

Dose (mg/kg/day)	Days (ml/rat)				
	1	7	14	21	28
Control	47.43±2.44	42.92±2.45	42.20±2.88	45.28±3.43	42.88±2.48
100	44.12±2.28	43.24±3.00	43.44±3.32	44.12±3.02	45.00±2.12
250	42.50±2.64	42.64±2.64	43.10±3.26	42.28±2.42	44.18±2.55
500	44.28±2.28	44.44±2.28	45.45±3.04	45.40±3.40	45.45±3.20

Values are mean ± S.E.M. (Dunnet 't' test). ^{ns}P>0.05 Vs Control N=6.

Table 5. Hematological parameters after 28days treatment with Pavattai ver kudineer chooranam

Parameter	Control	100 mg/kg	250 mg/kg	500 mg/kg
Red blood cell (mm^3)	4.28±0.40	4.88±0.35	4.62±0.38	4.20±0.21
HB (%)	14.41±0.5	14.0±0.72	14.46±0.42	14.22±0.29
Leukocyte($x10^3$/Cu.mm)	3.12±0.3	3.12±0.42	3.31±0.40	2.54±0.32
Platelets(K/µl)	1.15±0.10	1.44±0.21	1.48±0.24	1.42±0.28
MCV (gl)	85.48±4.0	85.18±4.1	85.44±3.88	85.10±4.22
Neutrophil	45.10±4.44	45.14 ±3.1	46.10±2.9	47.14±3.82
Lymphocyte	42.00±0.6	42.18±0.8	44.20±1.0	45.12±2.44
Monocyte	4.8±0.02	4.2±0.2	4.8±0.3	3.8±0.3*
Eosinophil	6.4±0.37	6.32±0.4	5.5±0.4	5.6±0.4
Basophil	0±0.00	0±0.00	0±0.00	0±0.00
ESR(mm)	1±00	1±00	1±00	1±00
PCV	46.02±2.1	45.12±2.44	44.14±2.64	44.19±2.78

Values are mean ± S.E.M. (Dunnet 't' test). *P<0.05; Vs Control N=6.

Table 6. Effect of treatment with Pavattai ver kudineer chooranam biochemical parameters.

Dose (mg/kg)	Control	100 mg/kg	250 mg/kg	500 mg/kg
Total Bilirubin (mg/dL)	0.24±0.02	0.23±0.02	0.24±0.02	0.30±0.08
Bilirubin direct (mg/dL)	0.02±0.00	0.02±0.01	0.00±0.00	0.03±0.10
ALP (U/L)	50.00±4.12	48.74±3.79	52.15±3.00	50.11±4.00
SGOT (U/L)	128.1±5.46	131.02±5.11	132.45±5.18	142.16±6.12
SGPT(U/L)	26.22±1.54	25.77±2.00	26.02±1.76	27.10±1.99
Total Protein(g/dl)	5.10±0.22	5.17±0.17	5.51±0.12	5.14±0.15
Albumin(g/dl)	3.88±0.04	3.74±0.05	3.14±0.08**	3.20±0.07**
Globulin(g/dl)	3.90±0.12	4.00±0.20	4.36±0.22	4.19±0.20

Values are mean ± S.E.M. **P<0.01. Vs Control N=6.

Table-7 RFT

Dose (mg/kg)	Control	100 mg/kg	250 mg/kg	500 mg/kg
Urea (µg/dL)	32.10±4.1	34.44±4.0	33.61±4.2	33.64±4.12
Creatinine (mg/dL)	30.45±2.4	28.19±3.1	28.71±3.4	29.88 ± 5.44
Uric acid (mg/dL)	3.42±0.06	3.11±0.09*	3.15±0.06	1.31±0.09**
Na m.mol	147.18±0.77	152.04±1.02**	156.02±1.05**	151.89±0.50**
K m.mol	5.89±0.60	6.12±1.04	6.11±0.05	5.99±0.09
Cl m.mol	102.56±3.51	101.71±4.26	102.10±4.42	102.45±5.10

Values are mean ± S.E.M. **P<0.01. Vs Control N=6.

Table-8. Lipid Profile

Dose (mg/kg)	Control	100 mg/kg	250 mg/kg	500 mg/kg
Total cholesterol (mg/dL)	55.00±5.10	56.10±5.62	55.07±5.42	54.46±3.11
HDL(mg/dL)	99.82±0.28	102.1±0.24	106.05±0.25**	108.11±0.56**
LDL(mg/dL)	61.14±2.70	58.40±4.66	64.62±0.58	67.42±3.23
VLDL(mg/dl)	25.14±2.20	24.72±2.12	25.00±2.19	25.61±2.41
Triglycerides (mg/dl)	26.81±4.8	26.95±5.01	27.18±4.22	28.64±4.82
Blood glucose(mg/dl)	100±12.1	98.34±10.2	102.2±12.4	104.2±10.12

*Values are mean ± S.E.M. **P<0.01. Vs Control N=6.*

Table-9 Urine Analysis

Parameters	**Control**	**100 mg/kg**	**250 mg/kg**	**500 mg/kg**
Colour	Yellow	Yellow	Yellow	Yellow
Transparency	Clear	Slightly turbid	Slightly cloudy	Slightly turbid
Specific gravity	1.010	1.010	1.010	1.010
PH	>7.2	>8.0	>7.5	>7.5
Protein	Nil	1+	1+	2+
Glucose	Nil	Nil	Nil	Trace
Bilirubin	-ve	-ve	-ve	-ve
Ketones	-ve	-ve	-ve	-ve
Blood	Absent	Absent	Absent	Absent
Urobilinogen	Normal	Normal	Normal	Normal
Pus cells	0-cells/HPF	1-cell/HPF	2-cells/HPF	1-cell/HPF
RBCs	Nil	Nil	0-1cells/HPF	Nil
Epithelial cells	Nil	1-cell/HPF	Nil	1-cell/HPF
Crystals	Nil	Nil	Nil	Nil
Casts	Nil	Nil	Nil	Nil
Others	Bacteria seen	Bacteria seen	Bacteria seen	Bacteria seen

Table 10. Effect of Pavattai ver kudineer chooranam on organ weight

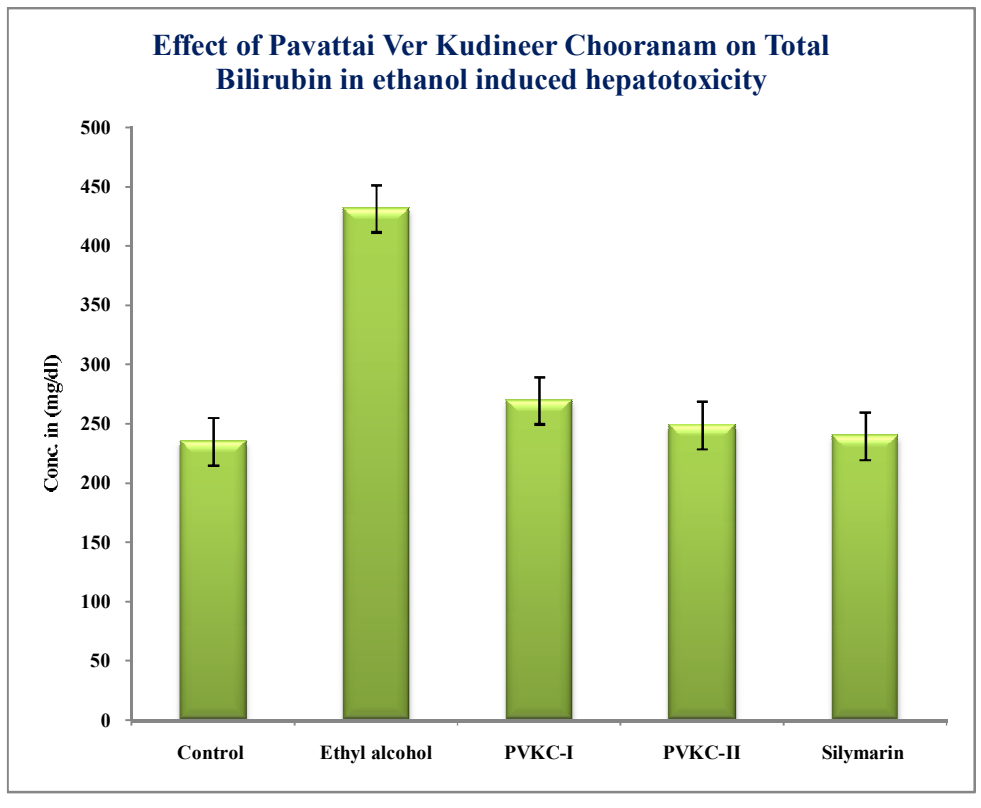
Dose (mg/kg)	Control	100 mg/kg	250 mg/kg	500 mg/kg
Liver (g)	6.22±0.36	6.47±0.32	6.52±0.30	6.32±0.30
Heart (g)	1.25±0.04	1.28±0.05	1.10±0.04	1.22±0.04
Lung (g)	1.80±0.11	1.74±0.05	1.76±0.04	1.72±0.05
Spleen (g)	0.89±0.04	0.84±0.04	0.84±0.04	0.88±0.04
Ovary (g)	0.08±0.00	0.08±0.02	0.09±0.04	0.06±0.02
Testes (g)	2.14±0.12	2.10±0.12	2.14±0.14	2.00±0.12
Brain (g)	1.88±0.04	1.79±0.03	1.82±0.05	1.90±0.05
Kidney (g)	1.24±0.05	1.20±0.03	1.18±0.04	1.21±0.04
Stomach (g)	1.15±0.14	1.12±0.10	1.15±0.12	1.17±0.18

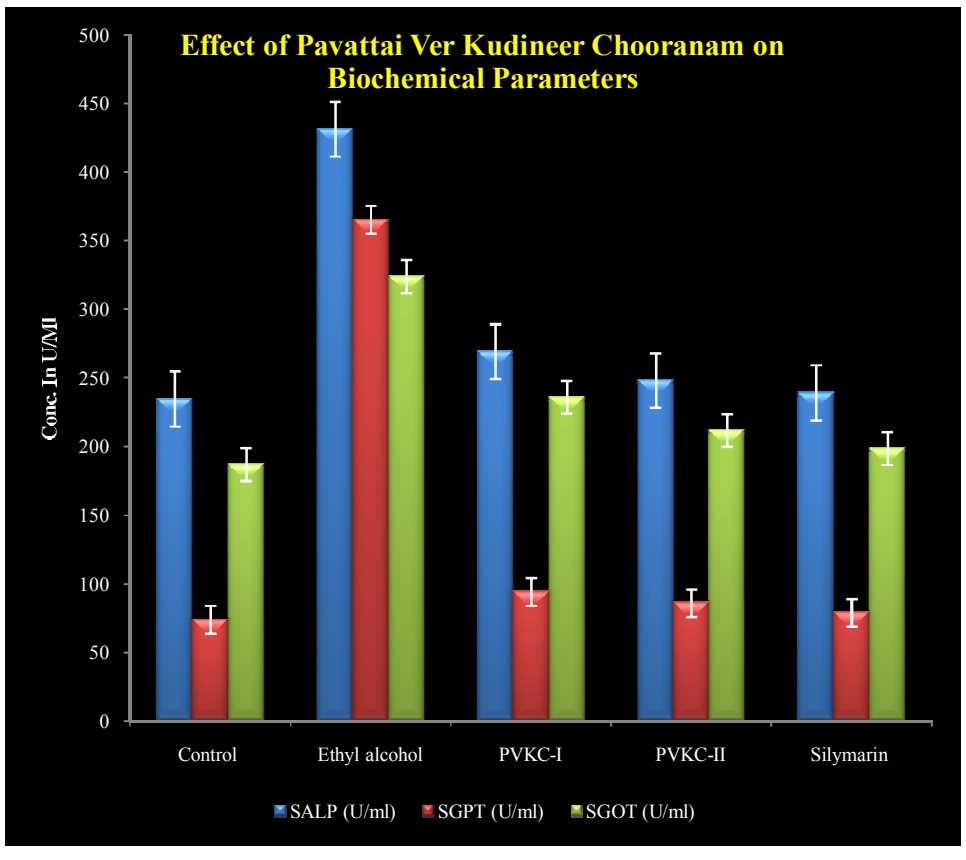
Values are mean ± S.E.M. (Dunnet 't' test). $^{ns}P>0.05$; Vs Control N=6.

Table: 1 Effect of Pavattaiver Kudineer Chooranam on ethanol induced hepatotoxicity

Values are mean ± S.E.M. (Dunnet 't' test). **P<0.015 Vs Control N=6.

S.No.	Groups	Total Bilirubin (mg/dl)	SALP (Units/ml)	SGPT (Units/ml)	SGOT (Units/ml)
1.	Control (2%CMC) 1 ml	0.92 ± 0.14**	234.95±12.10**	74.16 ± 1.20**	187.15 ± 12.42**
2.	50% Ethanol 12ml / Kg	2.42± 0.37	431.40±13.20	365.45±2.18	324.10± 19.21
3.	PVKC (250mg/kg)	0.126± 0.15**	269.54±17.43**	94.22± 3.41**	236.28± 10.55**
4.	PVKC (250mg/kg)	0.107± 0.18**	248.42±14.10**	86.14± 3.02**	212.00± 15.12**
5.	Silymarin (200mg/kg)	0.84± 0.08**	239.33±10.25**	79.10± 22.35**	198.94 ±16.47**


Effect of Pavattai Ver Kudineer Chooranam on Total Bilirubin in ethanol induced hepatotoxicity
Conc. in (mg/dl)
500
450
400
350
300
250
200
150
100
50
0
Control
Ethyl alcohol
PVKC-I
PVKC-II
Silymarin


Effect of Pavattai Ver Kudineer Chooranam on Biochemical Parameters
Conc. In U/Ml
500
450
400
350
300
250
200
150
100
50
0
Control
Ethyl alcohol
PVKC-I
PVKC-II
Silymarin
SALP (U/ml)
SGPT (U/ml)
SGOT (U/ml)

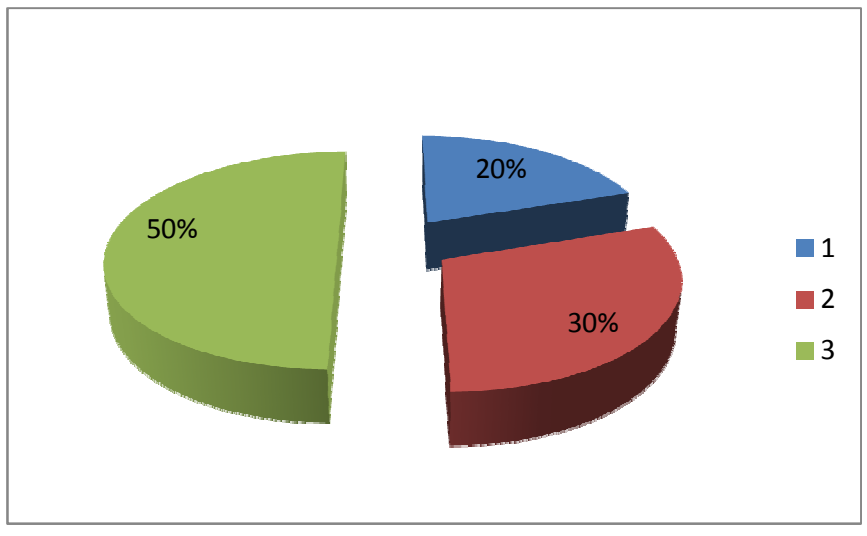
GENDER DISTRIBUTION:

KALLEERAL NOI

S.NO	GENDER	NO.OF PATIENTS	PERCENTAGE
1.	MALE	20	100%

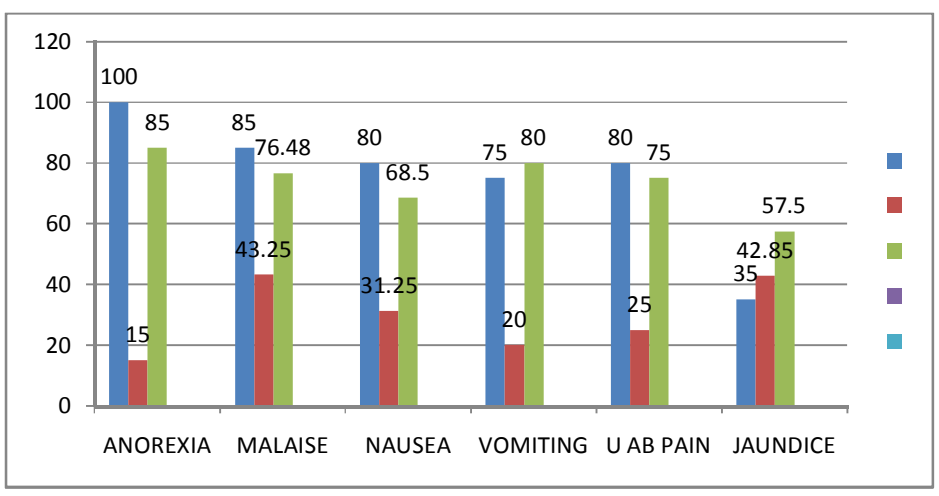
AGE DISTRIBUTION:

S.NO.	AGE	NO.OF PATIENTS
1.	20-30	4 (20%)
2.	31-40	6 (30%)
3.	41-60	10(50%)



IMPROVEMENT SHOWING SIGNS AND SYMPTOMS BEFORE AND AFTER TREATMENT KALLEERAL NOI PATIENTS.

S.NO	**Symptoms**	Before Treatment	After Treatment	
			No improvemernt	Improvement
1	anorexia	20(100%)	3 (15%)	17(85%)
2	malaise	17 (85%)	4(23.52 %)	13 (76.48 %)
3	nausea	16(80%)	5 (31.25%)	11(68.5%)
6	vomiting	15 (75%)	3 (20%)	12(80%)
5	Upper abdomenal pain	16(80%)	4(25%)	12(75%)
6	jaundice	7(35%)	3(42.85%)	4(57.15%)



KA LEERAL NOI (ALCOHOLIC LIVER DISEASE)

Paired t test for Symptoms before and after treatment:

Variable	patient	Mean	Std.dev	t.value	P value
Before symptoms	20	4.60	0.88	14.44	P<0.0001
After symptoms	20	1.05	0.94		

For Symptoms the mean and_standard deveation before treatment is 4.60 ±0.88 and after treatment is 1.05 ±0.94 which is statistically significant(p<0.0001).

Paired t test for T BILIRUBIN before and after treatment:

Variable	patient	Mean	Std.dev	t.value	P value
Before treatment	20	1.00	0.52	4.17	P<0.0001
After treatment	20	0.68	0.37		

For T BILIRUBIN, the mean and standard deveation efore treatment 1.00 ±0.52 and after treatment is 0.68 ±0.37 which is statistically significant(p<0.0001).

Paired t test for SGOT before and after treatment:

Variable	patient	Mean	Std.dev	t.value	P value
Before treatment	20	75.00	32.93	8.45	P<0.0001
After treatment	20	37.95	17.52		

For SGOT, the mean and standard deveation before treatment is 75.00 ±32.93and after treatment is 37.95±17.52 which is statistically significant(p<0.0001).

Paired t test for SGPT before and after treatment:

Variable	patient	Mean	Std.dev	t.value	P value
Before treatment	20	58.90	15.78	10.38	P<0.0001
After treatment	20	29.90	12.76		

For SGPT, the mean and standard deveation before treatment is 58.90±15.78 and after treatment is which is 29.90±12.6 statistically significant(p<0.0001)

TABLES FOR TRAIL DRUG-2 GANDHAGA MAATHIRAI

QUALITATIVE ANALYSIS:

.S.NO	PARAMETERS	RESULTS
1.	chloride	present
2.	Sulphate	Present
3.	Magnesium	Present
4.	Iron	Present
5	Alluminium	Present
6.	Zinc	present
7.	Sodium	Present
8.	Alkaloides	Present
9.	Calcium	Present
10.	Pottasium	present

PHYSICAL PROPERTIES

S.No	Characteristic test	Results
1.	pH	4.6
2.	Ash value	0.96
3.	Water soluble ash	0.02

Qualitative Analysis

S.No.	Phrameters	Results
1.	Calcium	Trace
2.	Iron (Ferric)	-
3.	Iron (Ferrous)	+
4.	Chloride	+
6.	Potassium	+
7.	Sodium	+
8.	Sulphate	+

Table 1: Dose finding experiment and its behavioral Signs of Toxicity

No	Dose mg/kg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	500	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1000	+	-	-	+	-	+	+	+	-	-	+	-	-	+	-	-	-	-	+	-
3	2000	+	+	-	+	-	+	+	+	+	-	+	-	+	+	-	-	+	+	+	+
4	5000	+	+	-	+		+	+	+	+	-	+	-	+	+	-	-	+	+	+	+

1. Alertness 2. Aggressiveness 3. Pile erection 4. Grooming 5. Gripping 6. Touch Response 7. Decreased Motor Activity 8. Tremors 9. Convulsions 10. Muscle Spasm 11. Catatonia 12. Muscle relaxant 13. Hypnosis 14. Analgesia 15.Lacrimation 16. Exophthalmos 17. Diarrhoea 18. Writhing 19. Respiration 20. Mortality

Table 2. Body wt (g) of albino rats exposed to *Gandhaga Mathirai* for 28days.

Dose (mg/kg/day)	Days				
	1	**7**	**14**	**21**	**28**
Control	150.4±2.40	152.10±2.18	156.17±2.4	158.15±2.16	158.88±3.32
25	150.5±2.25	153.21±2.66	154.12±0.21	156.42±0.24	157.2±6.10
50	154.4±3.55	155.30±2.08	155.44±2.25	158.20±3.12	162.11±2.52
100	148.2±4.21	151.11±3.10	153.48±2.17	157.00±5.10	159.00±4.12

Values are mean ± S.E.M. (Dunnet't' test). $^{ns}P>0.05$. N=6.

Table 3. Food (g/day) intake of rats exposed to *Gandhaga Mathirai* for 28days.

Dose (mg/kg/day)	Days (gms/rats)				
	1	**7**	**14**	**21**	**28**
Control	41.11±2.34	42.10±2.11	45.17±2.18	45.12±2.18	44.26±2.18
25	40.41±2.42	42.14±2.18	44.48±2.28	45.04±2.52	45.18±2.44
50	40.20±2.22	42.52±2.12	43.14±2.40	44.20±2.40	43.61±2.10
100	41.12±2.21	41.24±2.45	43.20±2.55	44.55±2.52	45.10±2.26

Values are mean ± S.E.M. (Dunnet 't' test). $^{ns}P>0.05$ Vs Control N=6.

Table 4. Water (ml/day) intake of rats exposed to *Gandhaga Mathirai* for 28days.

Dose (mg/kg/day)	Days(ml/rat)				
	1	7	14	21	28
Control	45.30±2.22	42.42±2.78	44.12±4.10	45.25±3.00	42.23±3.02
25	40.42±2.20	43.41±3.00	45.10±2.88	44.12±3.11	45.42±2.10
50	44.36±2.24	42.18±2.41	43.56±2.56	42.28±2.26	47.14±3.15
100	42.41±2.35	44.62±2.18	45.24±2.44	45.20±3.40	45.24±3.25

Values are mean ± S.E.M. (Dunnet 't' test). ^{ns}P>0.05 Vs Control N=6.

Table 5. Hematological parameters after 28days treatment with *Gandhaga Mathirai.*

Parameter	Control	25mg/kg	50mg/kg	100mg/kg
Red blood cell (mm^3)	4.48±0.35	4.40±0.30	4.42±0.30	4.21±0.22
HB (%)	14.12±0.42	14.4±0.40	14.24±0.22	14.18±0.24
Leukocyte ($x10^3$/Cu.mm)	3.12±0.3	3.10±0.4	3.62±0.31	3.70±0.32
Platelets(K/µl)	1.34±0.22	1.42±0.24	1.40±0.22	1.50±0.20
MCV (gl)	85.10±4.20	86.18±4.12	85.14±3.88	85.56±4.00
N	47.10±4.52	46.14 ±2.4	47.12±2.5	47.12±3.0

L	27.12±0.4	26.12±3.10	28.24±2.40	25.10±2.12
M	2.0±0.02	2.2±0.2	2.1±0.3	2.4±0.2
E	3.2±0.40	5±0.5*	4±0.4	4±0.4
B	0±0.00	0±0.00	0±0.00	0±0.00
ESR(mm)	1±00	1±00	1±00	1±00
PCV	42.10±2.4	43.14±2.10	42.18±2.12	42.24±2.00

Values are mean ± S.E.M. (Dunnet 't' test). *P<0.05; Vs Control N=6.

Table 6. Effect of treatment with *Gandhaga Mathirai* biochemical parameters.

Dose (mg/kg)	Control	25mg/kg	50mg/kg	100mg/kg
Total Bilirubin (mg/dL)	0.20±0.05	0.22±0.03	0.22±0.03	0.31±0.05
Bilirubin direct (mg/dL)	0.00±0.00	0.02±0.01	0.04±0.00	0.02±0.10
ALP (U/L)	51.12±4.20	48.12±3.84	51.52±2.18	50.11±4.20
SGOT (U/L)	128.04±4.72	130.11±4.22	132.40±5.10	145.12±4.72*
SGPT(U/L)	26.21±1.10	27.21±1.22	28.00±1.18	27.24±2.18
Total Protein(g/dl)	5.10±0.25	5.15±0.24	5.22±0.27	6.00±0.31
Albumin(g/dl)	3.52±0.06	3.66±0.05	3.12±0.06**	3.35±0.05
Globulin(g/dl)	3.49±0.12	4.21±0.14*	4.14±0.12*	4.56±0.24**

Values are mean of 6 animals ± S.E.M. *P<0.05; **P<0.01. Vs Control N=6.

Table-7 RFT

Dose (mg/kg)	Control	25mg/kg	50mg/kg	100mg/kg
Urea(µg/dL)	34.54±4.08	36.12±4.12	37.11±4.20	35.66±4.10
Creatinine (mg/dL)	30.15±3.10	31.24±3.2	26.10±2.12	29.12 ± 3.1
Uric acid (mg/dL)	2.38±0.05	1.94±0.05**	2.12±0.08*	2.16±0.08
Na m.mol	142.45±0.94	144.05±1.02	146.12±1.14	145.02±1.12
K m.mol	5.58±0.75	5.77±1.00	5.65±0.08	5.75±0.08
Cl m.mol	104.05±4.42	102.24±4.04	104.52±4.40	103.12±4.23

Values are mean ± S.E.M. *P<0.05;**P<0.01. Vs Control N=6.

Table-8. Lipid Profile

Dose (mg/kg)	Control	25mg/kg	50mg/kg	100mg/kg
Total cholesterol (mg/dL)	54.12±4.86	55.12±5.00	55.10±4.78	53.12±4.00
HDL(mg/dL)	135.02±0.25	138.1±0.21**	143.12±0.27**	152.20±0.26**
LDL(mg/dL)	72.10±2.61	42.82±3.25**	45.12±3.22**	41.52±3.00**
VLDL(mg/dl)	25.30±2.14	26.27±2.21	25.31±2.52	26.20±2.44
Triglycerides (mg/dl)	26.13±4.8	27.10±4.4	25.88±4.0	25.52±4.3
Blood glucose(mg/dl)	108±10.00	109±10.21	105±12.12	108±10.22

*Values are mean ± S.E.M. **P<0.01. Vs Control N=6.*

Table-9 Urine Analysis

Parameters	**Control**	**25mg/kg**	**50mg/kg**	**100mg/kg**
Colour	Yellow	Yellow	Yellow	Yellow
Transparency	Clear	Slightly turbid	Slightly cloudy	Slightly turbid
Specific gravity	1.010	1.010	1.010	1.010
PH	>7.2	>8.0	>7.5	>7.5
Protein	Nil	1+	1+	2+
Glucose	Nil	Nil	Nil	Trace
Bilirubin	-ve	-ve	-ve	-ve
Ketones	-ve	-ve	-ve	-ve
Blood	Absent	Absent	Absent	Absent
Urobilinogen	Normal	Normal	Normal	Normal
Pus cells	0-cells/HPF	1-cell/HPF	2-cells/HPF	1-cell/HPF
RBCs	Nil	Nil	0-1cells/HPF	Nil
Epithelial cells	Nil	1-cell/HPF	Nil	1-cell/HPF
Crystals	Nil	Nil	Nil	Nil
Casts	Nil	Nil	Nil	Nil

Table 10. Effect of *Gandhaga Mathirai* on organ weight

Dose (mg/kg)	Control	25mg/kg	50mg/kg	100mg/kg
Liver (g)	6.52±0.40	6.70±0.32	6.41±0.30	6.42±0.28
Heart (g)	1.28±0.05	1.31±0.05	1.14±0.07	1.12±0.05
Lung (g)	1.82±0.10	1.74±0.05	1.76±0.04	1.64±0.04
Spleen (g)	0.78±0.04	0.75±0.03	0.76±0.03	0.78±0.04
Ovary (g)	0.07±0.02	0.08±0.04	0.09±0.04	0.09±0.03
Testes (g)	2.10±0.14	2.12±0.18	2.20±0.12	2.11±0.14
Brain (g)	1.88±0.02	1.79±0.03	1.82±0.03	1.90±0.03
Kidney (g)	1.16±0.03	1.15±0.03	1.18±0.04	1.15±0.03
Stomach (g)	1.20±0.15	1.22±0.14	1.24±0.16	1.26±0.17

Values are mean ± S.E.M. (Dunnet 't' test). $^{ns}P>0.05$; Vs Control N=6.

Table-1: Effect of Gandhaga Mathirai on isolated Guinea pig ileum preparation

Sr. No	Dose of Histamine (µg/ml)	Percent of maximum response	
		Histamine alone	Histamine+Gandhaga Mathirai (1mg/ml)
1	10	2.0±0.10	0.6±0.2**
2	20	2.4±0.14	0.9±0.2**
3	40	3.0±0.11	1.2±0.2**

Values are expressed in mean ± SEM, **p< 0.01 compared with histamine induced contraction (30mm as 100%); n=3

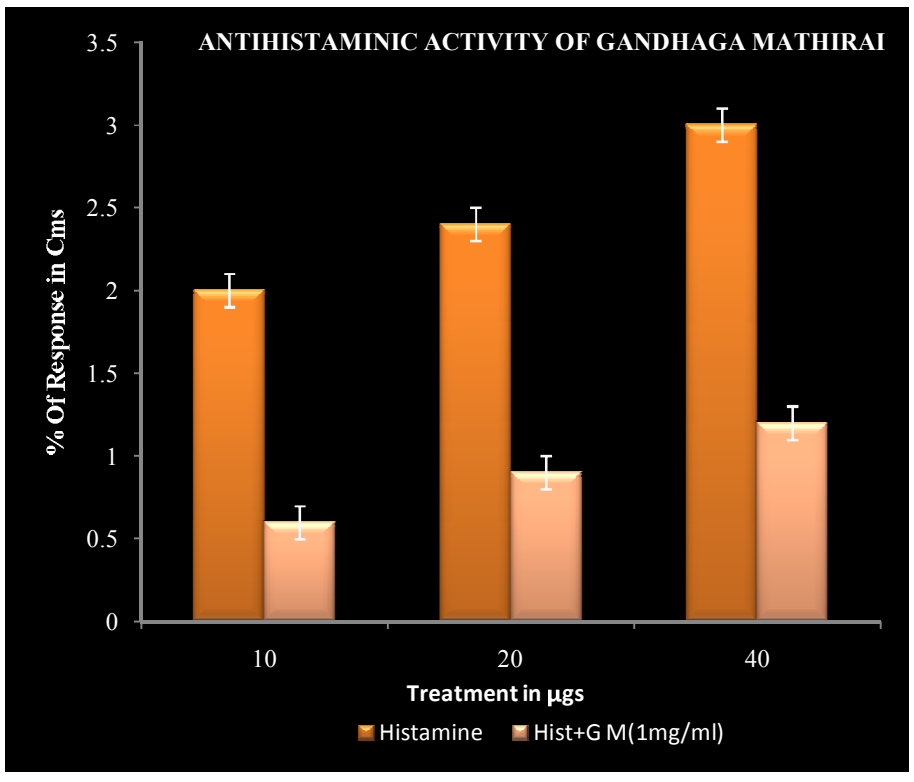
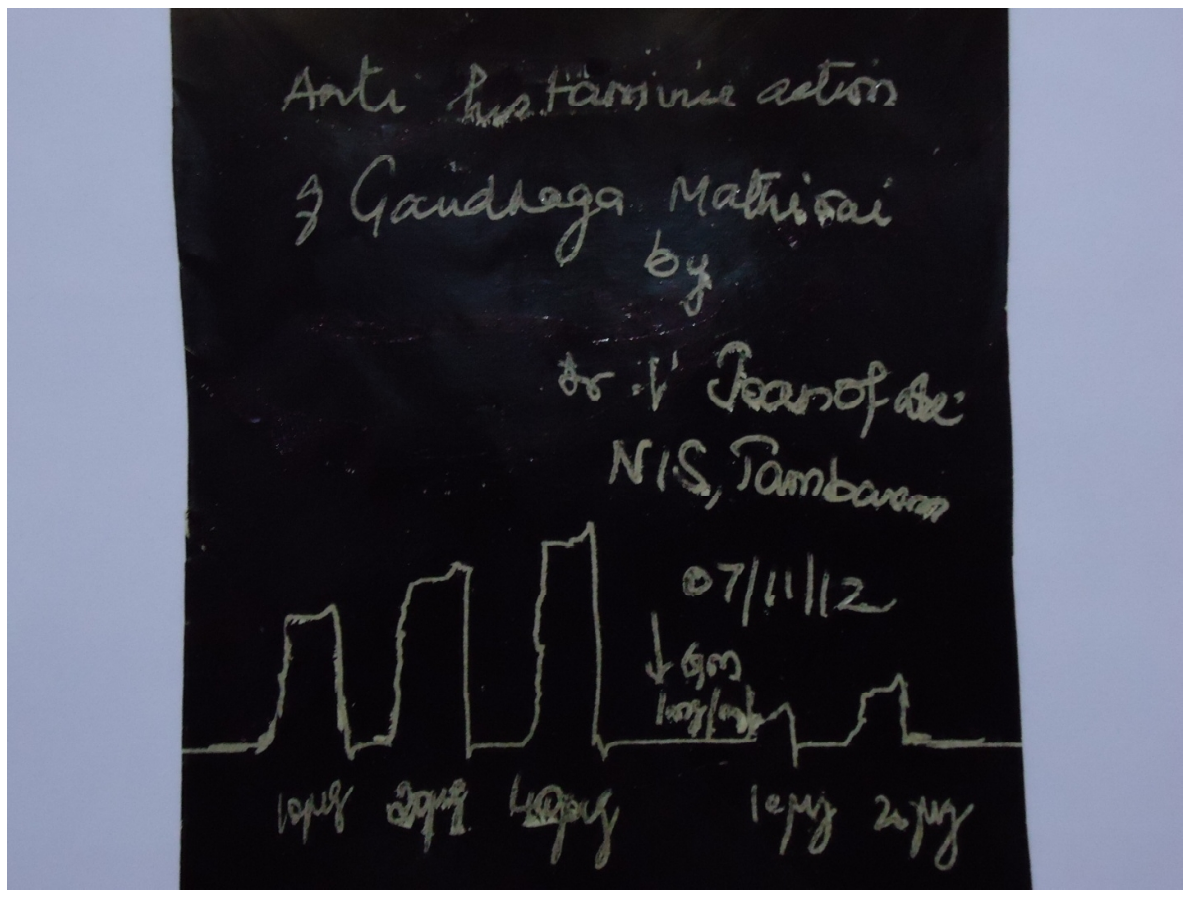


Table-1: Effect of Gandhaga Mathirai on isolated Guinea pig ileum preparation

Sr. No	Dose of Histamine (µg/ml)	Percent of maximum response	
		Histamine alone	Histamine+Gandhaga Mathirai (1mg/ml)
1	10	2.0±0.10	0.6±0.2**
2	20	2.4±0.14	0.9±0.2**
3	40	3.0±0.11	1.2±0.2**

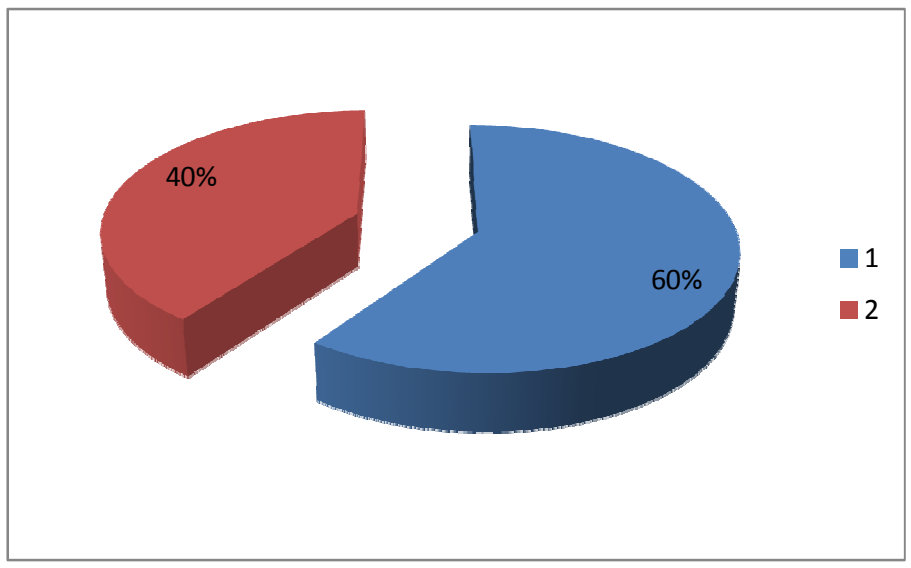
Values are expressed in mean ± SEM, **p< 0.01 compared with histamine induced contraction (30mm as 100%); n=3


Anti Sweatshop action
by
N.S. Tambaram
07/11/12

GENDER DISTRIBUTION:

KAANAKADI

S.NO	GENDER	NO.OF PATIENTS	PERCENTAGE
1.	FEMALE	12	60%
2.	MALE	8	40%



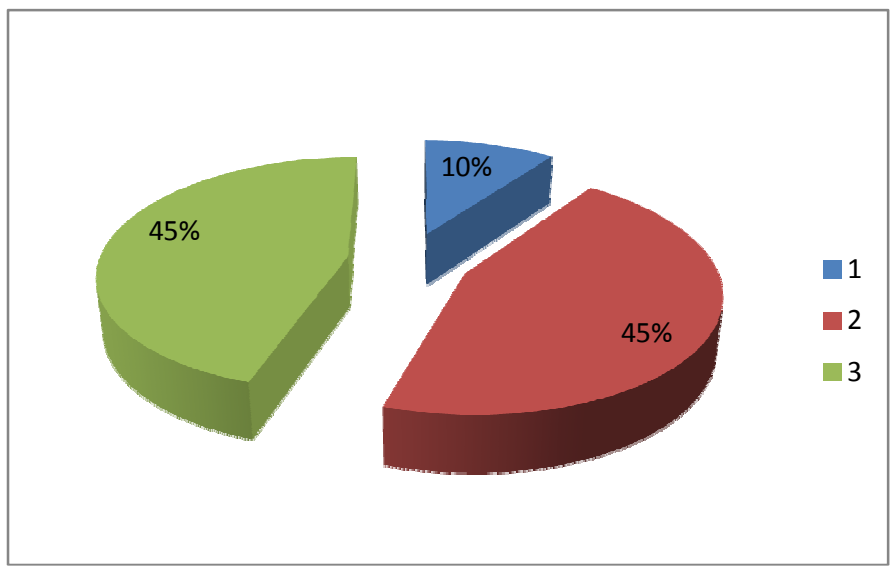
1 FEMALE

2 MALE

AGE DISTRIBUTION:

KAANAKADI

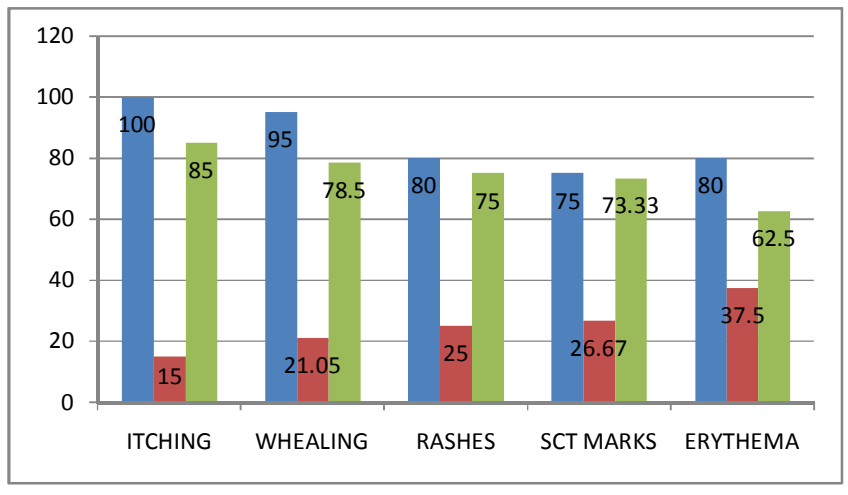
S.NO.	AGE	NO.OF PATIENTS
1.	20-30	2(10%)
2.	31-40	9 (45%)
3.	41-60	9(45%)



1 20-30yrs
2 - 31-40yrs
3 41-60yrs

IMPROVEMENT SHOWING SIGNS AND SYMPTOMS BEFORE AND AFTER TREATMENT OF KAANAKADI PATIENTS.

S.NO	**Symptoms**	Before Treatment	After Treatment	
			No improvemernt	Improvement
1	Itching	20(100%)	3(15%)	17 (85%)
2	wheals	19 (95%)	4 (21.05%)	15 (78.95%)
3	Rashes	16(80%)	4(25%)	12(75%)
4	Scratch marks	15(75%)	4(26.67%)	11 (73.33%)
5	Erythema	16 (80%)	6 (37.5%)	10(62.5%)



KAANAKADI(URTICARIA)

Paired t test for Symptoms before and after treatment:

Variable	Obs	Mean	Std.dev	t.value	P value
Before symptoms	20	4.35	0.87	12.11	P<0.0001
After symptoms	20	1.05	0.88		

For Symptoms the mean and standard deveation before treatment is 4.35± 0.87 and after treatment is 1.05± 0.88 which is statistically significant(p<0.0001).

Paired t test for IgE before and after treatment:

Variable	Obs	Mean	Std.dev	t.value	P value
Before symptoms	20	758.54	680.79	7.63	P<0.0001
After symptoms	20	597.5	603.31		

For IgE ,the mean and standard deveation before treatment 758.54 ±680.79 and after treatment is 597.5 ±603.31 which is statistically significant(p<0.0001).

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    வெளியீடு- சரசுவதி மகால் நூலகம்

    பக்க எண்-466-467

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வெளியீடு- தமிழக அரசுபதிப்பு துறை

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பதிப்பாசிரியர்-ச.அரங்கநாசன்

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Patient : **Mr . RAVI** (42/M)

Branch : **TAMBARAM**

Address :

SID Date :27/ 9/2012

Reg Time :14:30: 09

Rpt Date : 27/9/2012

Rpt Time :19:46 :10

Referrer : **Dr. NATIONAL INSTITUTE OF SIDDHA**

page # : 1

Test	Result	Reference value
	TEST REPORT	
BLOOD - IMMUNOLOGY		
IGE	: 398.00 IU/ml	0- 1Year :0.0- 15 IU/ml 1 - 5 Years :0.0- 60 IU/ml 6- 9 Years ;0.0- 90IU/ml 10-15 Years :0.0- 200IU/ml 15 Years & Above : 0.0- 100IU/ml
Method .: ECLIA		

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Patient : **Mr . JOTHI** (40/F)

Branch : **TAMBARAM**

Address :

SID Date :10/ 9/2012

Reg Time :12:30: 09

Rpt Date : 10/9/2012

Rpt Time :18:46 :10

Referrer : **Dr. NATIONAL INSTITUTE OF SIDDHA**

page # : 1

TEST REPORT

Test	Result	Reference value
BLOOD - IMMUNOLOGY		
IGE	: 1272.00 IU/ml	0- 1Year :0.0- 15 IU/ml 1 - 5 Years :0.0- 60 IU/ml 6- 9 Years ;0.0- 90IU/ml 10-15 Years :0.0- 200IU/ml 15 Years & Above : 0.0- 100IU/ml
Method : ECLIA		

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KALLEERAL NOI - SCAN REPORT BEFORE AND AFTER TREATMENT

S/NO	OP/IP NO	AGE					
				ABDOMINAL SCAN			
			SEX	BT		AT	
1	C83364	41	M	FATTY LIVER		NORMAL STUDY	
2	C91371	30	M	NORMAL STUDY		NORMAL STUDY	
3	C099363	41	M	NORMAL STUDY		NORMAL STUDY	
4	C88708	22	M	FATTY LIVER		NORMAL STUDY	
5	D003387	28	M	NORMAL STUDY		NORMAL STUDY	
6	C88416	42	M	FATTY LIVER		NORMAL STUDY	
7	C92427	38	M	FATTY LIVER		NORMAL STUDY	
8	5051	52	M	FATTY LIVER		NORMAL STUDY	
9	5022	37	M	FATTY LIVER		NORMAL STUDY	
10	C97752	33	M	NORMAL STUDY		NORMAL STUDY	
11	C87304	48	M	FATTY LIVER		NORMAL STUDY	
12	C93331	42	M	NORMAL STUDY		NORMAL STUDY	
13	C86858	36	M	FATTY LIVER		NORMAL STUDY	
14	C82459	36	M	NORMAL STUDY		NORMAL STUDY	
15	D006570	36	M	FATTY LIVER		NORMAL STUDY	
16	C96419	48	M	FATTY LIVER		NORMAL STUDY	
17	C99726	45	M	FATTY LIVER		NORMAL STUDY	
18	C85775	48	M	NORMAL STUDY		NORMAL STUDY	
19	C98666	20	M	NORMAL STUDY		NORMAL STUDY	
20	C81356	50	M	FATTY LIVER		NORMAL STUDY	

LAB INVESTGATIONS –BEFORE TREATMENT KALLEERAL NOI

S/NO	OP/IP NO	AGE		Hb gm%	Tccells/cumm		DC (cells/cumm)			ESR		BS(gms%)		Urea	Creatinine	T.choles	Urine			
						P	L	E	RBC	1/2 hr	1 hr	F	R/PP				Alb	Sug	Dep	
			SEX																pus	epi
1	C83364	41	M	15.2	10,000	48	39	9	4.3	4	8	110	124	18	0.4	190	Nil	Nil	1 to 2	2 to 4
2	C91371	30	M	16.2	9,700	64	46	4	5.4	2	4	76	95	20	0.6	226	Nil	Nil	2to3	2to3
3	C099363	41	M	12.6	14,600	63	46	3	3.5	2	4	88	112	18	0.8	164	Nil	Nil	2to4	2 to 4
4	C88708	22	M	17.8	6,300	52	49	2	4.3	2	4	106	110	16	0.5	189	Nil	Nil	1to2	2 to 4
5	D003387	28	M	13.6	7,000	52	26	6	5.6	6	12	90	112	25	0.8	195	Nil	Nil	1to2	2to4
6	C88416	42	M	15	7,200	56	38	5	4.7	4	6	102	122	23	0.5	235	Nil	Nil	2 to 4	2 to 4
7	C92427	38	M	13.7	8,900	48	45	2	4.9	4	8	89	114	22	0.8	225	Nil	Nil	2to4	1 to 2
8	5051	52	M	15.4	9,800	46	38	7	4.8	2	6	95	115	18	0.5	228	Nil	Nil	2to3	2to4
9	5022	37	M	11.6	10,300	79	17	3	4.5	6	12	100	112	17	0.8	150	Nil	Nil	1 to 2	2to4
10	C97752	33	M	16.8	7,900	56	44	3	5.6	2	4	96	110	19	0.8	205	Nil	Nil	1to4	1 to 2
11	C87304	48	M	10.6	7,200	60	38	4	4.3	4	8	98	130	25	0.8	165	Nil	Nil	2to3	1to2
12	C93331	42	M	10.4	8,400	55	35	4	4.9	8	16	96	120	20	0.7	175	Nil	Nil	1 to 2	1 to 2
13	C86858	36	M	16.2	7,100	58	49	2	5.1	6	12	99	126	24	0.8	199	Nil	Nil	2to3	2 to 4
14	C82459	36	M	14.2	6,700	56	36	4	5	2	6	98	115	22	0.8	230	Nil	Nil	2to4	1 to 2
15	D006570	36	M	12.9	8,900	56	36	6	5.2	4	8	86	142	20	0.6	196	Nil	Nil	2to3	1to2
16	C96419	48	M	10.4	6,700	58	38	4	3.7	4	6	80	106	24	0.8	226	Nil	Nil	2to4	1 to2
17	C99726	45	M	10.6	6,900	65	39	3	4.6	6	12	86	116	24	0.8	225	Nil	Nil	2to4	2 to 4
18	C85775	48	M	14.6	7,600	47	39	4	4.7	4	8	110	132	20	0.6	170	Nil	Nil	2 to 4	2 to 4
19	C98666	20	M	14.1	6,300	49	50	2	5.6	4	8	100	126	17	0.6	165	Nil	Nil	2to4	2to4
20	C81356	50	M	14.6	8,600	56	39	4	4.9	2	4	96	1132	22	0.7	185	Nil	Nil	2 to 4	2to3

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LAB INVESTIGATIONS – AFTER TREATMENT KALLEERAL NOI

S/NO	OP/IP NO	AGE	SEX	Hb gm%	Tccells/cumm	DC (cells/cumm)				ESR		BS(gms%)		Urea	Creatinine	T.choles	Urine			
						P	L	E	RBC	1/2 hr	1 hr	F	R/PP				Alb	Sug	Dep	
																			pus	epi
1	C83364	41	M	16.4	10,100	48	42	9	4.6	4	8	117	125	14	0.4	156	Nil	Nil	1 to 2	2 to 4
2	C91371	30	M	16.8	9,600	65	46	5	5.6	2	4	75	90	18	0.6	202	Nil	Nil	2to3	2to3
3	C099363	41	M	12.1	14,700	65	40	3	3.5	2	4	86	106	14	0.6	112	Nil	Nil	1to2	2 to 4
4	C88708	22	M	17.7	6,200	50	48	2	4.8	2	4	99	106	16	0.5	161	Nil	Nil	1to2	2 to 4
5	D003387	28	M	13.6	6,900	55	23	6	5.5	4	8	88	106	23	0.6	182	Nil	Nil	1to2	1 to 2
6	C88416	42	M	15.2	7,300	55	39	4	4.6	4	6	96	109	23	0.5	213	Nil	Nil	2 to 4	2 to 4
7	C92427	38	M	13.6	7,400	46	48	2	4.8	4	18	82	105	18	0.4	198	Nil	Nil	1 to 2	1 to 2
8	5051	52	M	15.1	9,800	40	36	6	4.7	2	6	92	110	16	0.5	201	Nil	Nil	1to2	2to4
9	5022	37	M	12	10,500	81	16	3	3.9	4	8	98	105	16	0.5	114	Nil	Nil	1 to 2	1 to 2
10	C97752	33	M	16.6	7,500	55	45	3	5.6	2	4	95	108	17	0.6	195	Nil	Nil	0 to 2	1 to 2
11	C87304	48	M	10.5	7,300	59	33	4	4.2	4	8	95	135	24	0.7	135	Nil	Nil	2to3	2 to 4
12	C93331	42	M	10.6	8,300	58	36	4	4.9	8	16	85	119	18	0.5	135	Nil	Nil	1 to 2	1 to 2
13	C86858	36	M	16.2	7,200	62	48	2	5.2	5	10	95	125	25	0.6	196	Nil	Nil	1 to 3	2 to 4
14	C82459	36	M	14.6	6800	56	37	4	5.2	2	6	90	110	20	0.5	213	Nil	Nil	2to3	1 to 2
15	D006570	36	M	13	8,800	52	34	6	4.9	4	8	80	140	18	0.6	187	Nil	Nil	2to3	2to4
16	C96419	48	M	10.9	5,700	58	36	4	3.7	4	6	75	105	19	0.6	206	Nil	Nil	2to4	1 to2
17	C99726	45	M	10.5	6,800	62	35	3	4.5	4	8	82	112	25	0.5	196	Nil	Nil	1 to 2	2 to 4
18	C85775	48	M	14.5	7,500	46	42	2	4.6	4	8	112	135	20	0.6	160	Nil	Nil	2 to 4	2 to 4
19	C98666	20	M	14.1	6,200	47	49	2	5.5	4	8	98	125	17	0.6	135	Nil	Nil	1 to 2	2to4
20	C81356	50	M	14.7	8,500	52	36	4	4.6	2	4	99	135	21	0.7	170	Nil	Nil	2 to 4	2to3

The Tamil Nadu Dr. M.G.R. Medical University

69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to ~~Mr/Ms~~/Dr. V. JOAN OF ARC

for participating as a ~~Resource Person~~ / Delegate in the VII Workshop

on **"Research Methodology & Biostatistics"**

for AYUSH Post-Graduates & Researchers

organized by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University

from 6th Feb. 2012 to 10th Feb. 2012.

DR. MAYILVAHANAN NATARAJAN
M.S.Orth. M.Ch.Orth. (L'pool) Ph.D. (Orth. Onco.) F.R.C.S. (Eng) D.Sc.
7th VICE CHANCELLOR

Dr. R. SRILAKSHMI, DCH, Ph.D.
REGISTRAR

Dr. N. KABILAN, M.D. (Siddha)
READER, DEPT. OF SIDDHA

NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: Dr. V. JOAN OF ARS (32101701)
Title: pre clinical and clinical Study on "PAVATTAI VER KUDINEER CHOORANAM" FOR Hepatoprotective activity in the management of KALLEERAL NOI (alcoholic liver diseases)
No. NIS/IEC/2011/3/9a - 24/12/2011

DECSION

Opinion of the Institutional Ethics Committee – Please Check one
✓ Approval _____ Modifications required prior to approval (Please specify one space below) _____ Disapproval Date of review: _____ Signed: _____ (Please print name) Dr.V.SUBRAMANIAN Chair person (Please delee as appropriate, Chairperson, Secretary)
Modifications needed Modification given to candidate
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to submitted to the IEC

K. Manickavasakam
(Dr. K. MANICKAVASAKAM)
Member Secretary

IAEC PROTOCOL NO: 1248/ac/09/CPCSEA/4-09A/2011

20/12/2011

CERTIFICATE

This is certify that the project title... Pre clinical and clinical Study on PAVATTAI VER KUDINEER CHOORANAm" for "HEPATO PROTECTIVE ACTIVITY" in the management OF KALLEERAL NOI (liver diseases) **has been approved by the IAEC.**

Prof. Dr. K. Manickavasakam — **Name of Chairman/Member Secretary IAEC:**

Dr. B. Jayachandran Dare — **Name of CPCSEA nominee:**

Signature with date

Chairman/Member Secretary of IAEC:

CPCSEA nominee:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by Office)

NATIONAL INSTITUTE OF SIDDHA
(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: Dr. V. JOAN OF ARC ..... (32101701)
Title: preclinical and clinical study on "GANDHAGA MATHIRAI" for "H1 Histamine antagonistic activity" in the management of "KAANAKADI" (Urticaria)
No. NIS/IEC/2011/3/96 - 24/12/2011

DECSION

Opinion of the Institutional Ethics Committee – Please Check one
✓ Approval _____ Modifications required prior to approval (Please specify one space below) _____ Disapproval K. Manickavasakam (Dr. K. MANICKAVASAKAM) Member secretary Date of review: _____ Signed: [signature] (Please print name) Dr.V.SUBRAMANIAN chair Person (Please delee as appropriate, Chairperson, Secretary)
Modifications needed Modification given to candidate
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to submitted to the IEC

IAEC PROTOCAL NO : 1248 / ac / 09 / CPCSEA / 4 - 09B / 2011

20/12/2011

CERTIFICATE

This is certify that the project title.. pre clinical and clinical Study on "CANDHAGA MAATHIRAI" for "H1 HISTAMINE ANTAGONISTIC ACTIVITY" In the Management of KAANAKADI (Urticaria) **has been approved by the IAEC.**

Prof. Dr. K. Manickavasagam — **Name of Chairman/Member Secretary IAEC:**

Dr. B. Jayachandran Dare — **Name of CPCSEA nominee:**

Signature with date

Chairman/Member Secretary of IAEC:

CPCSEA nominee:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by Office)

CERTIFICATE

This is to certify that the project title: Preclinical study on "Pavattai ver Kudineer chooranam" for Hepatoprotective Activity in the management of kalleral noi (liver disease) has been approved by the IAEC with the reference number XIII/VELS/PCOL/30/2000/CPCSEA/IAEC/08.08.12

Name of Member Secretary IAEC:

Dr. J. Anbu

Name of CPCSEA nominee:

Dr. K. Sadhasivan Pillai

Signature with date

08/08/12

Member Secretary of IAEC

Dr. J.ANBU. M.Pharm., Ph.D., D.M.L.T.,MBA.
Professor & Head
Department of Pharmacology & Toxicology
School of Pharmaceutical Sciences
Vels University
Pallavaram, Chennai-600 117

CERTIFICATE

This is to certify that the project title: Preclinical study on "Ganthaga Mathirai" for H1 Antagonist Activity in the management of Kanakadi (urticaria) has been approved by the IAEC with the reference number XIII/VELS/PCOL/31/2000/CPCSEA/IAEC/08.08.12

Name of Member Secretary IAEC:

Dr. J. Anbu

Name of CPCSEA nominee:

Dr. K. Sadhasivan Pillai

Signature with date

J. Anbu 08/08/12

Member Secretary of IAEC

Dr. J.ANBU, M.Pharm., Ph.D., D.M.L.T., MBA.
Professor & Head
Department of Pharmacology & Toxicology
School of Pharmaceutical Sciences
Vels University
Pallavaram, Chennai-600 117

KALLEERAL NOI- SYMPTOMS BEFORE AND AFTER TREATMENT

S NO	OP/IPNO	AGE	SEX	ANOREXIA		MALAISE		NAUSEA		VOMITING		UPPER AB PAIN		JAUNDICE	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	C93331	42	M	+	_	+	_	+	_	_	_	+	_	+	_
2	C83364	41	M	+	_	+	_	+	_	+	_	+	_	+	+
3	C86858	36	M	+	_	+	+	+	_	_	_	_	_	+	_
4	C91371	30	M	+	_	_	_	+	+	+	+	+	+	_	_
5	C87304	48	M	+	_	+	_	_	_	_	_	+	_	_	_
6	C88708	22	M	+	_	+	_	+	_	+	_	+	_	_	_
7	C92427	38	M	+	+	+	_	+	_	+	_	+	_	_	_
8	5022	37	M	+	+	+	_	+	_	+	+	+	_	+	+
9	5051	52	M	+	_	_	_	_	_	+	_	_	+	_	_
10	C97752	33	M	+	_	+	+	+	+	_	_	+	_	_	_
11	C88416	42	M	+	_	+	+	_	_	+	+	+	_	+	_
12	D006570	36	M	+	_	+	_	+	+	+	_	+	_	_	_
13	C82459	36	M	+	_	+	_	+	+	_	_	_	_	+	+
14	D003387	28	M	+	_	+	_	_	_	+	_	+	+	_	_
15	C96419	48	M	+	_	+	_	+	_	+	_	+	_	_	_
16	C099726	45	M	+	_	+	_	+	_	+	_	+	+	_	_
17	C099363	56	M	+	_	_	_	+	_	+	_	_	_	+	_
18	C85775	48	M	+	+	+	_	+	_	+	_	+	_	_	_
19	C98666	20	M	+	_	+	_	+	+	+	_	+	_	_	_
20	C81356	50	M	+	_	+	+	+	_	+	_	+	_	_	_

"A Perfect Diagnosis is half the Treatment Done"

CARE WELL
DIAGNOSTIC CENTRE

Patient : **Mrs.JOTHI**
Ref.No : **572/CWDP**
Ref.by : **C/O NATIONAL INSTITUTE OF SIDDHA**

Age/Sex : **4040 /Female**
SID Date : **31/07/2012**
Page : 1 / 1

TEST	RESULT	UNIT	REFERENCE VALUE
SEROLOGY			
IgE	1462.7	IU/mL	Adult : < 87 1 Year : < 29 1 - 2 Year : < 49 2 - 3 Year : < 45 3 - 9 Year : < 52

~~~End of Report~~~

Lab Incharge

NEW PERUNGALATHUR
No. 22, Srinivasa Raghavan Road, Srinivasa Nagar,
NEW PERUNGALATHUR, Chennai - 600 063.
Phone : 2274 0077

AMINJIKARAI
No. 29, Railway Colony 3rd Street,
AMINJIKARAI, Chennai - 600 029.
Phone : 4200 9832

TAMBARAM
No- 124,Gandhi Road, **TAMBARAM WEST**,
Chennai – 600045
Mobile : 9941004389
~~~

Bioline Laboratory
41, Velachery Main Road,
Mahalakshmi Nagar,
East Tambaram, Chennai - 600 073.
Phone : 044 - 65392800 / 43324659
E-mail : info@biolinelab.com

SID No : 013468

Patient ID : P0047187

Mr. RAVI S
Age / Sex : 42 Y / Male
Ref. By : **SAI HS DIAGNOSTIC CENTRE.**

Collected Date : 17/08/2012 / 10:32
Received Date : 17/08/2012 / 10:35
Reported Date : 17/08/2012 / 12:14

Final Test Report

Specimen	Test Name	Result	Units	Reference Range/Method
IMMUNOLOGY				
SERUM	IgE	583.8	IU/mL	Neonates : Upto 1.5 Infants in 1st year : Upto 15.0 Children 1 - 5 years : Upto 60.0 Children 6 - 9 years : Upto 90.0 Children 10 - 15 years: Upto 200.0 Adults : Upto 100.0 (ECLIA)

End of the Report

Dr. Vaidyanathan S Aiyer MD., FRCPATH. (U.K)
Consultant Pathologist

Dr. V. Chandrasekar Ph.D.
Lab Director

LAB INVESTIGATIONS- BEFORE TREATMENT KAANAKADI

S/NO	OP/IP NO	Age/sex	Hb gm%	Tccells/cumm		DC (cells/cumm)			ESR		BS(gms%)		Urea	Creatinine	T.choles	Urine				Motion		
					P	L	E	M	1/2 hr	1 hr	F	PP				Alb	Sug	Dep	epi	Ova	Cyst	Occ.bld
																		pus				
1	c82635	35/F	10.2	6,300	65	26	2	0	2	4	85	110	12	0.6	164	Nil	Nil	4to5	2 to 4	Nil	Nil	Nil
2	C83086	32/F	12.6	9,200	56	40	3	0	2	4	76	98	15	0.6	160	Nil	Nil	2 to 4	2 to 4	Nil	Nil	Nil
3	C83330	39/M	16.8	8,200	61	36	2	0	2	4	85	114	16	0.6	190	Nil	Nil	2 to 4	2 to 4	Nil	Nil	Nil
4	C84936	37/M	15.2	9,200	54	42	2	0	6	12	83	95	18	0.6	140	Nil	Nil	2 to 4	1to3	Nil	Nil	Nil
5	C82457	43/F	13.4	6,900	50	46	4	0	6	12	91	115	27	0.7	151	Nil	Nil	2 to 4	2to3	Nil	Nil	Nil
6	C85487	40/F	12.6	6,400	43	45	3	0	2	6	70	102	20	0.6	176	Nil	Nil	2 to 4	2 to 4	Nil	Nil	Nil
7	4059	32/F	13.4	8,000	68	30	2	0	6	12	75	110	14	0.4	177	Nil	Nil	3to5	1 to 2	Nil	Nil	Nil
8	C87414	40/M	15.4	6,300	52	43	4	0	2	8	82	105	18	0.6	155	Nil	Nil	2 to 4	1 to 3	Nil	Nil	Nil
9	C57248	40/F	13.7	8,200	50	42	2	0	2	6	92	116	14	0.7	145	Nil	Nil	1 to 2	1 to 2	Nil	Nil	Nil
10	C89054	46/F	10.2	6,200	42	45	2	0	2	6	83	104	14	0.6	140	Nil	Nil	1to2	1 to 2	Nil	Nil	Nil
11	c90719	46/M	15.2	6,300	55	47	2	0	4	6	103	118	15	0.4	210	Nil	Nil	2 to 4	2 to 4	Nil	Nil	Nil
12	c92812	42/M	13.6	6,800	50	46	2	0	4	8	72	106	22	0.4	126	Nil	Nil	1 to 2	2to4	Nil	Nil	Nil
13	C96020	38/M	15.2	6,700	65	22	2	0	2	4	75	98	16	0.6	109	Nil	Nil	1to2	2 to 4	Nil	Nil	Nil
14	D002764	30/F	13.5	6,700	56	36	4	0	6	12	104	117	16	0.4	130	Nil	Nil	2to4	2to4	Nil	Nil	Nil
15	C90718	38/F	13.3	8,100	52	42	2	0	4	8	102	118	14	0.6	180	Nil	Nil	2to4	2to3	Nil	Nil	Nil
16	C89976	45/F	11.6	7,200	58	42	4	0	4	8	98	105	16	0.5	168	Nil	Nil	2to4	1 to2	Nil	Nil	Nil
17	C94238	42/M	16.3	5,200	60	32	4	0	2	4	96	106	15	0.6	115	Nil	Nil	1 to 2	2 to 4	Nil	Nil	Nil
18	C82530	36/F	15.2	8,100	65	35	2	0	2	4	84	136	16	0.5	182	Nil	Nil	2 to 4	2 to 4	Nil	Nil	Nil
19	C90562	29/M	16.2	7,700	66	26	3	0	2	4	102	125	22	0.5	225	Nil	Nil	2to4	2to4	Nil	Nil	Nil
20	C89780	34/F	12.9	6,600	59	38	4	0	4	8	75	99	16	0.5	202	Nil	Nil	1to2	2 to 4	Nil	Nil	Nil

LAB IVESTIGATIONS – AFTER TREATMENT KAANAKADI

S/NO	OP/IP NO	Age/sex	Hb gm%	Tccells/cumm		DC (cells/cumm)			ESR		BS(gms%)		Urea	Creatinine	T.choles	Urine				Motion		
					P	L	E	M	1/2 hr	1 hr	F	PP				Alb	Sug	Dep		Ova	Cyst	Occ.bld
																		pus	epi			
1	c82635	35/F	10.6	6,200	65	26	2	0	2	4	76	111	14	0.4	164	Nil	Nil	3to5	2 to 4	Nil	Nil	Nil
2	C83086	32/F	12.1	9,100	53	45	4	0	4	8	86	105	17	0.6	170	Nil	Nil	2 to 4	2to3	Nil	Nil	Nil
3	C83330	39/M	16.2	8,200	64	38	3	0	2	4	90	102	18	0.4	195	Nil	Nil	2to3	2 to 4	Nil	Nil	Nil
4	C84936	37/M	15.2	8,900	55	45	2	0	8	14	86	99	20	0.8	150	Nil	Nil	2to3	1to3	Nil	Nil	Nil
5	C82457	43/F	12.2	7,000	55	43	6	0	6	12	102	116	26	0.8	180	Nil	Nil	2 to 4	2to3	Nil	Nil	Nil
6	C85487	40/F	12.6	6,500	45	40	6	0	2	6	75	105	22	0.6	193	Nil	Nil	2to3	2 to 4	Nil	Nil	Nil
7	4059	32/F	10.6	7,800	64	30	4	0	8	16	80	115	18	0.4	189	Nil	Nil	3to5	1 to 2	Nil	Nil	Nil
8	C87414	40/M	15.4	6,200	50	46	5	0	2	8	76	110	22	0.8	175	Nil	Nil	1to2	1 to 3	Nil	Nil	Nil
9	C57248	40/F	13.6	8,400	55	46	4	0	4	8	95	118	18	0.8	176	Nil	Nil	1 to 2	1 to 2	Nil	Nil	Nil
10	C89054	46/F	10	6,100	44	39	4	0	2	6	86	116	22	0.6	465	Nil	Nil	1to2	1 to 2	Nil	Nil	Nil
11	c90719	46/M	14.8	6,800	55	48	2	0	4	6	106	120	19	0.4	220	Nil	Nil	1to2	2 to 4	Nil	Nil	Nil
12	c92812	42/M	13.2	6,900	52	48	2	0	4	8	74	109	24	0.4	136	Nil	Nil	2to4	2to4	Nil	Nil	Nil
13	C96020	38/M	15.6	6,700	64	36	2	0	2	4	86	106	18	0.8	145	Nil	Nil	1to2	2 to 4	Nil	Nil	Nil
14	D002764	30/F	12.6	6,800	58	54	5	0	6	12	105	119	22	0.6	150	Nil	Nil	2to3	2to4	Nil	Nil	Nil
15	C90718	38/F	13.6	8,000	55	46	2	0	6	8	99	120	18	0.6	195	Nil	Nil	1to2	2to3	Nil	Nil	Nil
16	C89976	45/F	13.6	7,100	60	44	4	0	4	8	95	106	22	0.8	189	Nil	Nil	1to2	2to3	Nil	Nil	Nil
17	C94238	42/M	16.4	5,000	64	45	4	0	2	4	98	117	22	0.8	158	Nil	Nil	1 to 2	2 to 4	Nil	Nil	Nil
18	C82530	36/F	15.6	8,300	66	45	2	0	2	4	90	135	18	0.6	195	Nil	Nil	2 to 4	1to2	Nil	Nil	Nil
19	C90562	29/M	15.4	7,600	55	34	3	0	2	4	105	130	22	0.5	230	Nil	Nil	2to4	2to4	Nil	Nil	Nil
20	C89780	34/F	13	6,700	60	40	4	0	4	8	76	101	18	0.6	209	Nil	Nil	1to2	2 to 4	Nil	Nil	Nil

INDIAN SCAN
ADVANCED DIAGNOSTIC CENTRE
◆ Multi Channel MRI ◆Multi Slice CT ◆ Digital Color Doppler ◆ Digital Ultrasonography
◆ Echocardiography ◆Computerised ECG ◆ Treadmill ◆PFT ◆ Endoscopy ◆Digital X-Ray ◆Laboratory

Patient Name:	*Mr. KALIDOSS*	*Age/Sex:*	*41/M*
Patient ID:	*9/07/2012*	*Visit No:*	*1*
Referred by:	*DR.V.JOAN OF ARC*	*Visit Date:*	*9/07/2012*

ABDOMEN & KUB SCAN REPORT

Liver : *Liver shows normal. No abscess or mass lesion seen. Liver measured – 15.6cms*

Gall bladder : *Gall Bladder appeared normal. No calculus seen in gall bladder. CBD Appeared normal. No calculus seen in CBD.*

Pancreas : *Pancreas appeared normal.*

Spleen : *Spleen appeared normal. Spleen measured 10.5 cms*

Aorta : *Aorta appeared normal. No Para aortic nodes seen.*

Peritoneal cavity: *Peritoneal cavity appeared normal.*

Adrenals : *Adrenals appeared normal.*

KUB

RK kidney : *Right Kidney measured 10.1 cms. Cortex and collecting system of right Appeared normal. No calculi seen.*

LK : *Left Kidney measured 9.8 cms. Cortex and collecting system of left kidney Appeared normal. No calculi seen.*

BLADDER : *Bladder appeared normal.*

PROSTATE : *Prostrate appeared normal. Measured in 3.2 X 2.8 X 2.2 cms (Weight = 15.1 GMS).No intra vesicle enlargement of prostate gland seen.*

IMPRESSION

Fatty liver .No other abnormalities seen

DR.JAYAPRIYA SARAVANAN, MBBS.,
Sonologist

MARUTHY HI-TECH
DIAGNOSTIC CENTRE
Govt. Royapettah Hospital Signal, Royapettah, Chennai - 600 014.
Phone : 044 - 28351299, 42105749

Patient Name:	Mr. DHARMAMITHRAN	Age/Sex:	30/M
Patient ID:	22/09/2012	Visit No:	1
Referred by:	Dr.V.joan of arc	Visit Date:	22/09/2012

ABDOMEN & KUB SCAN REPORT

Liver : Liver shows normal. No abscess or mass lesion seen. Liver Measured – 12.9cms

Gall Bladder : Gall Bladder appeared normal. No calculus seen in Gall Bladder. CBD appeared normal. No calculus seen in CBD.

Pancreas : Pancreas appeared normal.

Spleen : Spleen appeared normal. Spleen measured 9.8cms

Aorta : Aorta appeared normal. No Para aortic nodes seen.

Peritoneal cavity: Peritoneal cavity appeared normal.

Adrenals : Adrenals appeared normal.

KUB

RK : Right Kidney measured 9.5 X 3.9 cms. Cortex and collecting System of right kidney appeared normal. No calculi seen.

LK : Left Kidney measured 9.7 X 4.1 cms. Cortex and collecting System of left kidney appeared normal. No calculi seen.

BLADDER : Bladder appeared normal.

PROSTATE : Prostrate appeared normal. Measured in 2.8 X 2.5 X 1.9 cms (Weight = 14.4 gms). No intra vesicle enlargement of prostate gland seen.

IMPRESSION

Normal study.

DR.S.NANDINI AZHAR, MBBS.,DMRD.,
RADIOLOGIST

Dr. S. NANDINI, MBBS., DMRD.,
CONSULTANT RADIOLOGIST
REGN. No. 43367

KAANAKADI SYMPTOMS-BEFORE AND AFTER TREATMENT

				ITCHING		WHEALS		RASHES		SCRATCH MARKS		ERYTHEMA	
S.NO	OP/IP NO	AGE	SEXX	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	C82635	35	F	+	_	+	_	+	_	+	_	+	_
2	C83086	32	F	+	_	+	_	+	_	+	_	+	_
3	C83330	39	M	+	+	+	+	+	_-	+	_	+	+
4	C84936	37	M	+	_	+	_	+	+	+	_	_	_
5	C82457	43	F	+	_	+	_	+	_	_	_	+	+
6	C85457	43	F	+	_	+	+	_	_	+	+	_	_
7	4059	32	F	+	_	+	_	+	_	+	_	+	_
8	C87414	40	M	+	+	+	_	+	_	_	_	+	_
9	C57248	40	F	+	_	+	_	_	_	+	_	+	_
10	C89054	46	F	+	+	+	_	+	_	+	_	+	_
11	C90719	56	M	+	_	+	+	+	_	+	+	_	_
12	C92812	42	M	+	_	+	_	_	_	_	_	+	+
13	C96020	38	M	+	_	+	_	+	_	+	_	+	+
14	D002764	30	F	+	_	+	_	+	_	+	_	+	+
15	C90718	38	F	+	_	+	_	+	+	_	_	_	_
16	C89976	45	F	+	_	+	+	_	_	+	+	+	+
17	C94238	42	M	+	_	+	_	+	+	+	+	+	_
18	C82530	36	F	+	_	+	_	+	+	_	_	+	_
19	C90652	29	M	+	_	_	_	+	_	+	_	+	_
20	C89780	34	F	+	_	+	_	+	_	+	_	+	_

IgE LEVEL OF KANAKADI PATIENTS BEFORE AND AFTER TREATMENT

S NO	OP/IPNO	AGE	SEX	IgE IU/ML	IgE IU/ML
				BT	AT
1	C82635	35	F	396.8	280
2	C83086	32	F	154.4	98.2
3	C83330	39	M	231.6	180
4	C84936	37	M	672.4	522
5	C82457	43	F	186	123
6	C85487	40	F	238.6	160.4
7	4059	32	F	1448	1118
8	C87414	40	M	248	152
9	C57248	40	F	1462.7	1272
10	C89054	46	F	2500	2240
11	C90719	46	M	1204	999.6
12	C92812	42	M	583.8	398
13	C96020	38	M	855	590
14	D002764	30	F	747.9	502
15	C90718	38	F	988	763.7
16	C89976	45	F	413.6	308
17	C94238	42	M	356.1	236
18	C82530	36	F	228	158.2
19	C90562	29	M	2137	1787
20	C89790	34	F	119	62

KALLEERAL NOI- LIVER FUNCTION TEST - BEFORE AND AFTER TREATMENT

S NO	OP/IP NO	AGE	SEX	BTTB	ATTB	BTDB	ATDB	BTIB	ATIB	BTOT	ATOT	BTPT	ATPT	BTALP	ATALP	BTTP	ATTP
1	C83364	41	M	0.9	0.6	0.3	0.2	0.6	0.4	55	28	46	30	182	172	7.2	7.2
2	C91371	30	M	0.8	0.4	0.3	0.2	0.5	0.2	46	33	59	24	257	237	7.5	7.4
3	C099363	56	M	1.3	1.3	0.6	0.5	0.7	0.8	157	90	64	33	202	186	6.9	5.3
4	C88708	22	M	0.8	0.7	0.3	0.2	0.5	0.4	50	24	48	26	181	195	6.8	6.8
5	D003387	28	M	1.5	0.5	0.5	0.4	0.3	0.2	55	35	46	36	290	245	6.7	6.3
6	C88416	42	M	0.4	0.3	0.2	0.2	0.4	0.3	160	75	100	65	153	130	6.9	6.3
7	C92427	38	M	0.4	0.4	0.3	0.2	0.2	0.2	102	35	94	24	228	205	6.5	6.2
8	5051	52	M	1.4	1.3	0.6	0.7	0.8	0.5	58	36	40	14	220	216	7	7.2
9	5022	37	M	0.5	0.3	0.2	0.2	0.3	0.2	78	50	59	45	341	269	6.8	6.5
10	C97752	33	M	0.9	0.9	0.3	0.3	0.6	0.5	51	24	56	18	216	190	7.4	7.3
11	C87304	48	M	0.5	0.3	0.2	0.2	0.3	0.2	52	26	46	19	166	176	7.5	7.3
12	C93331	42	M	0.4	0.2	0.5	0.4	0.4	0.3	74	34	56	32	246	235	6.8	7.8
13	C86858	36	M	0.7	0.6	0.3	0.3	0.4	0.2	49	32	45	16	200	176	6.7	6.5
14	C82459	36	M	1.5	1.3	0.5	0.6	0.7	0.8	58	32	52	28	162	175	7.5	7.6
15	D006570	36	M	1.2	0.9	0.5	0.4	0.7	0.6	96	58	75	53	293	275	6.5	6.2
16	C96419	48	M	1.9	0.8	0.8	0.4	1.1	0.9	92	25	65	29	241	196	6.1	5.9
17	C99726	45	M	1.8	0.9	0.4	0.3	0.6	0.5	54	28	49	25	295	254	6.2	6.1
18	C85775	48	M	0.7	0.6	0.3	0.2	0.4	0.3	75	34	64	38	216	166	7.2	7.7
19	C98666	20	M	0.5	0.2	0.3	0.3	0.2	0.3	64	26	49	18	216	154	6.2	6.4
20	C81356	50	M	1.9	1.2	0.3	0.3	1.3	0.4	74	34	65	25	246	174	6	7.6

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Patient : **Mr . RAVI** (42/M)

SID Date :27/ 9/2012

Branch : **TAMBARAM**

Reg Time :14:30: 09

Address :

Rpt Date : 27/9/2012

Rpt Time :19:46 :10

Referrer : **Dr. NATIONAL INSTITUTE OF SIDDHA**

page # : 1

Test	Result	Reference value
	TEST REPORT	
BLOOD - IMMUNOLOGY		
IGE	: 398.00 IU/ml	0- 1Year :0.0- 15 IU/ml 1 - 5 Years :0.0- 60 IU/ml 6- 9 Years ;0.0- 90IU/ml 10-15 Years :0.0- 200IU/ml 15 Years & Above : 0.0- 100IU/ml
Method .: ECLIA		

DR. SP. GANESAN. MBBS ,DCP.,

* End Of Report *

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Patient : **Mr . JOTHI** (40/F)

Branch : **TAMBARAM**

Address :

SID Date :10/ 9/2012

Reg Time :12:30: 09

Rpt Date : 10/9/2012

Rpt Time :18:46 :10

Referrer : **Dr. NATIONAL INSTITUTE OF SIDDHA**

Test	Result	Reference value
	TEST REPORT	
BLOOD - IMMUNOLOGY		
IGE	: 1272.00 IU/ml	0- 1Year :0.0- 15 IU/ml 1 - 5 Years :0.0- 60 IU/ml 6- 9 Years ;0.0- 90IU/ml 10-15 Years :0.0- 200IU/ml 15 Years & Above : 0.0- 100IU/ml
Method : ECLIA		

DR.SP.GANESAN. MBBS ,DCP.,

* End Of Report *

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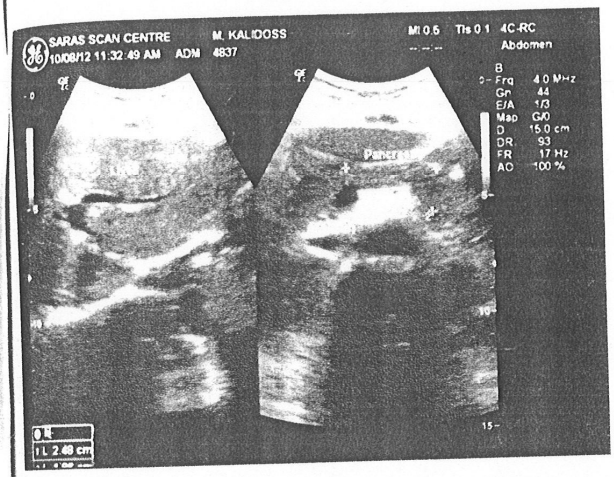
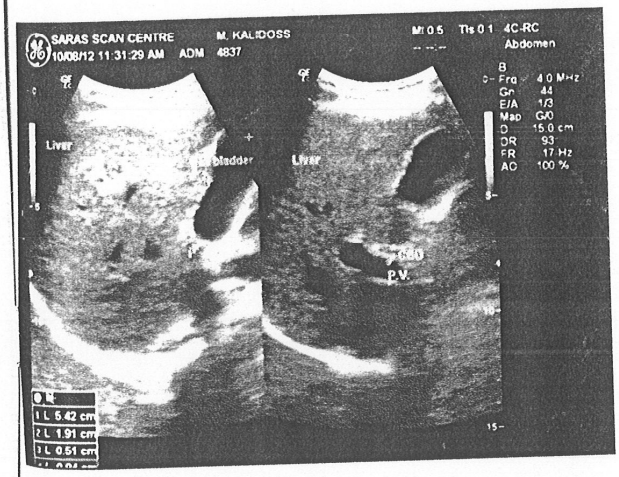
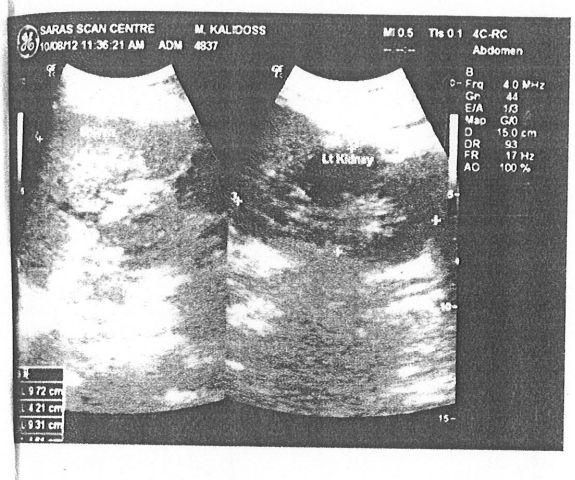
SARAS

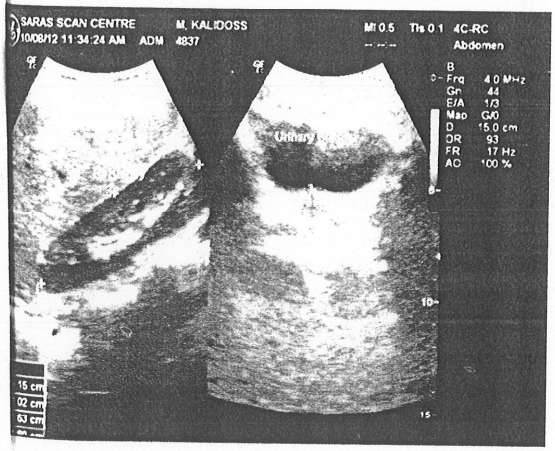
Dr.





DVET


SARAS SCAN CENTRE
M. KALIDOSS
10/08/12 11:36:21 AM ADM 4837
MI 0.5 TIs 0.1 4C-RC
Abdomen
B
Frq 4.0 MHz
Gn 44
E/A 1/3
Map G/0
D 15.0 cm
DR 93
FR 17 Hz
AO 100 %
Lt Kidney
9.72 cm
4.21 cm
9.31 cm


SARAS SCAN CENTRE
M. KALIDOSS
10/08/12 11:34:24 AM ADM 4837
MI 0.5 TIs 0.1 4C-RC
Abdomen
B
Frq 4.0 MHz
Gn 44
E/A 1/3
Map G/0
D 15.0 cm
DR 93
FR 17 Hz
AO 100 %
15 cm
02 cm
67 cm

SARAS SCAN CENTER (ULTRA SOUND) PHONE : 222292

Dr. RAMADOSS HOSPITAL . No. 499, NEHRU STREET, TINDIVANAM

Timing 9 a.m to 2 0p.m. and 5 p.m. to 9 p.m.

Ref. by. Dr.J.Parasuraman.M.S. Date :10.08.2012

Ld. No : 4837

Pt, Name : Kalidoss Age: 41Years

ABDOMINAL SONOGRAPHY

LIVER	:	Normal size Uniform echotexture No focal lesion CBD,PV + IHBR Normal.
PANCREAS	:	Shows normal size and echotexture.
GALL BLADDER	:	Shows normal size and echotexture
SPLEEN	:	Shows normal size and echotexture.
® KIDNEY	:	Shows normal size and echotexture.
(L) KIDNEY	:	Shows normal size and echotexture.
URINARY BLADDER	:	Shows normal size and echotexture
IMPRESSION	:	NORMAL STUDY

SONOLOGIST

HITECH SCANS

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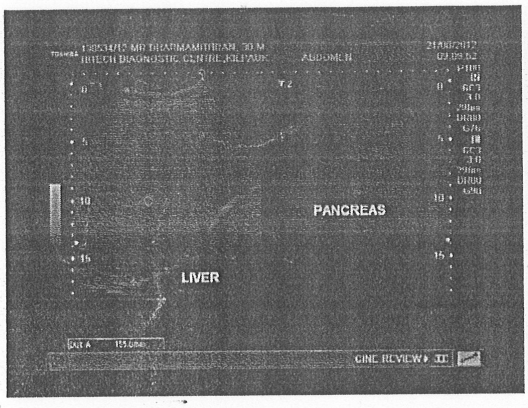

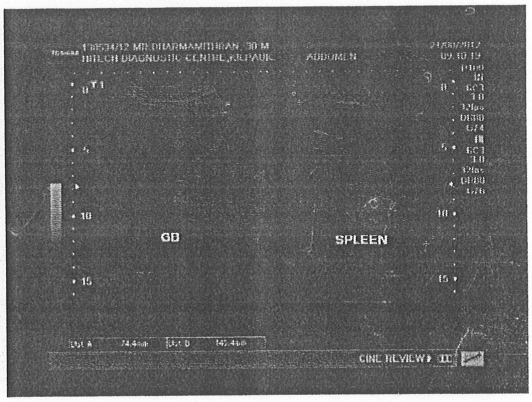

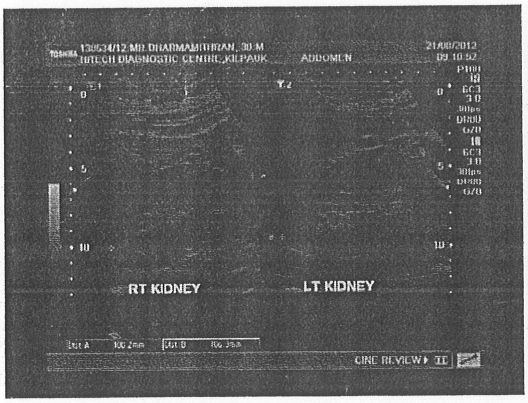

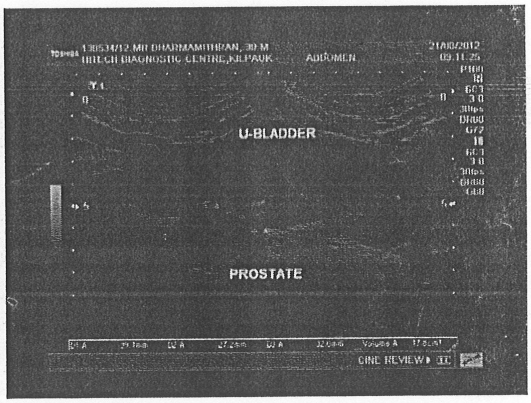

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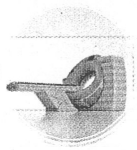

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RT. KIDNEY	:	**10.0 CM LONG, NORMAL CORTICAL ECHOES. NO PELVICALYCEAL DILATATION, NO CALCULI**
LT. KIDNEY	:	**10.6 CM LONG, NORMAL CORTICAL ECHOES. NO PELVICALYCEAL DILATATION, NO CALCULI**
BLADDER	:	**WALL SMOOTH. TERMINAL URETERS NOT DILATED.**
PROSTATE	:	**NORMAL, 3.9 X 2.7 X 3.2 CM, HOMOGENOUS ECHOES, APP. VOL. 17.8 ML.**
R.I.F.	:	**NORMAL.**
IMPRESSION	:	**ENLARGED FATTY LIVER, SPLENOMEGALY, OTHERWISE NORMAL STUDY FOR AGE.**

DR.V.D.TRIVEDI.
SONOLOGIST.

HITECH SCANS
The Extra Care Imaging

Patient Name	Mr.DHARMAMITHRAN	Patient Age	30 Year(s)
Patient ID	138534/12	Gender	Male
Referral Doctor	-	Visit Date	21/08/2012

ULTRASOUND COMPLETE ABDOMEN:

LIVER : ENLARGED AT 15.5 CM, PATCHY BRIGHT PARENCHYMA, NO FOCAL LESION.

GALLBLADDER : 7.4 CM LONG, SMOOTH WALLS, NO SLUDGE, NO CALCULI C.B.D. 6 MM DIA, NO INTRA HEPATIC BILIARY RADICLE DILATATION.

PANCREAS : NORMALLY HYPERECHOIC, NO DUCT DILATATION.

SPLEEN : ENLARGED SPAN AT 14.5 CM, HOMOGENOUS PARENCHYMA, NO FOCAL LESION.

PARA AORTIC AREA : NORMAL.